US009289658B1

(12) United States Patent
Murphy, Jr.

(10) Patent No.: US 9,289,658 B1
(45) Date of Patent: *Mar. 22, 2016

(54) **SPORTS RACKETS AND RACKET HANDLES**

(71) Applicant: **H. Stetser Murphy, Jr.**, Marietta, GA (US)

(72) Inventor: **H. Stetser Murphy, Jr.**, Marietta, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **14/623,312**

(22) Filed: **Feb. 16, 2015**

(51) **Int. Cl.**
A63B 49/08 (2015.01)

(52) **U.S. Cl.**
CPC ***A63B 49/08*** (2013.01)

(58) **Field of Classification Search**
CPC . A63B 49/08; A63B 59/0014; A63B 59/0025
USPC 473/549, 551; D21/756
See application file for complete search history.

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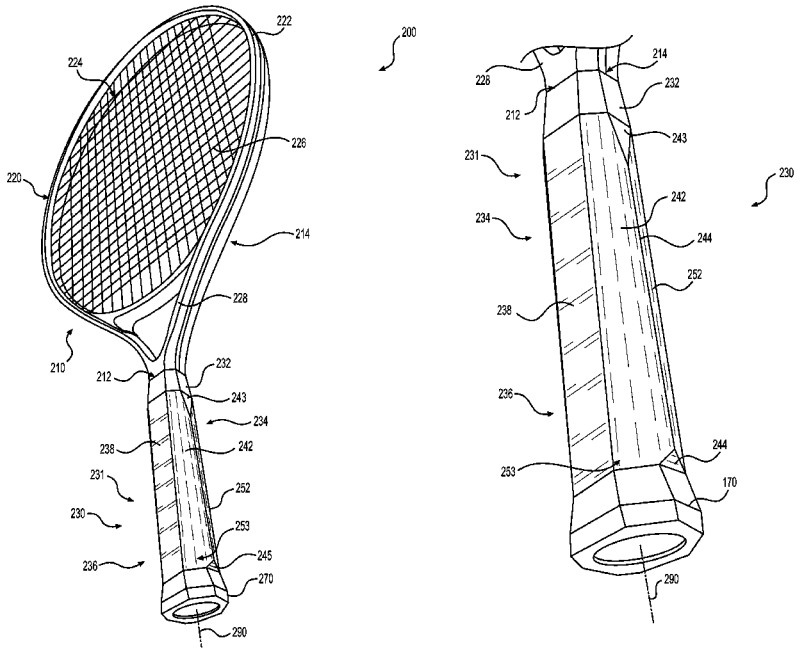
Primary Examiner — Raleigh W Chiu
(74) *Attorney, Agent, or Firm* — McGurk Intellectual Property Advisors

(57) **ABSTRACT**

Sports rackets and handles for rackets are set forth in the present disclosure. The sports rackets comprise heads with handles attached thereto, wherein the handles are beveled and include shoulders that flare outward from the sides of the handle.

37 Claims, 33 Drawing Sheets



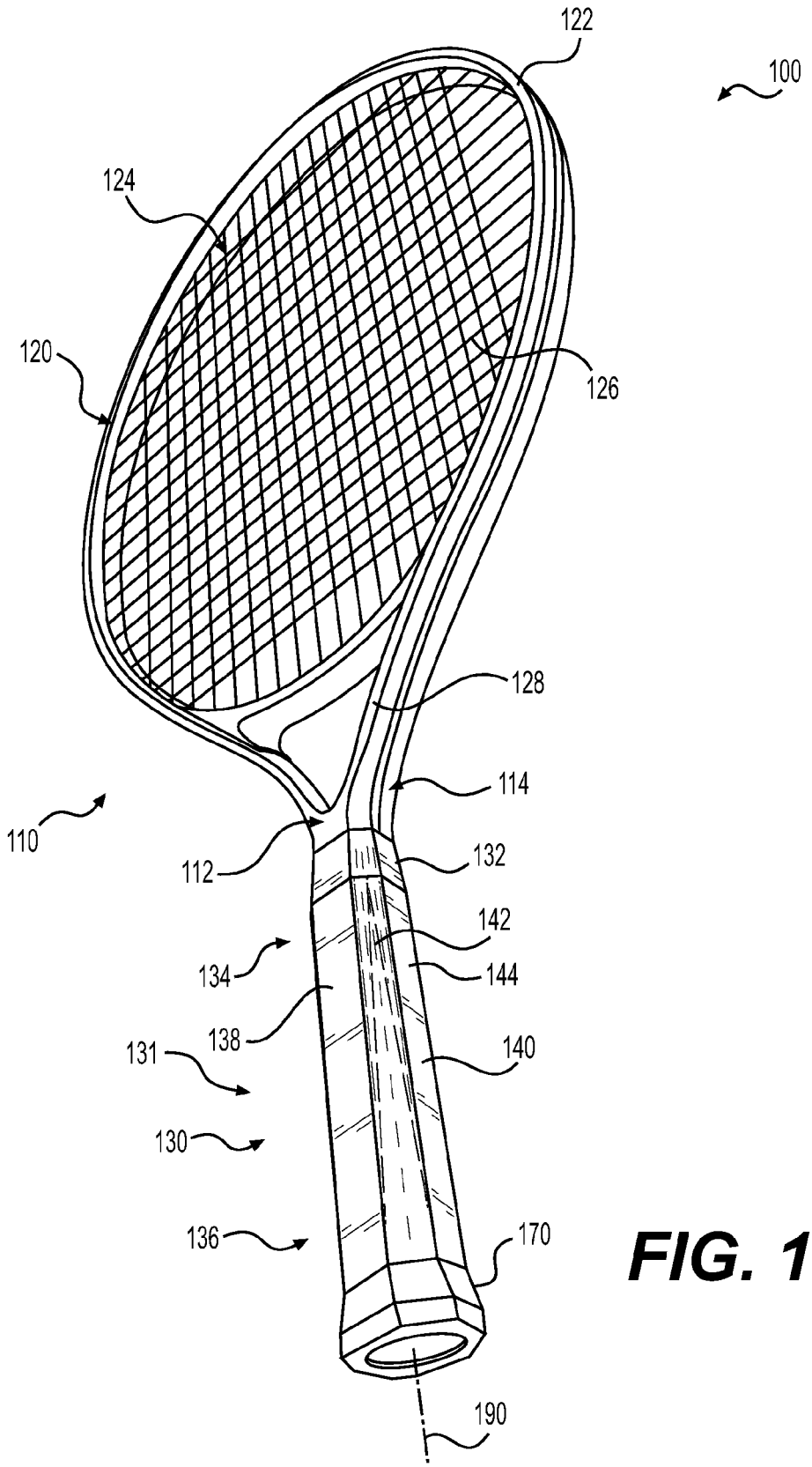

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FIG. 1

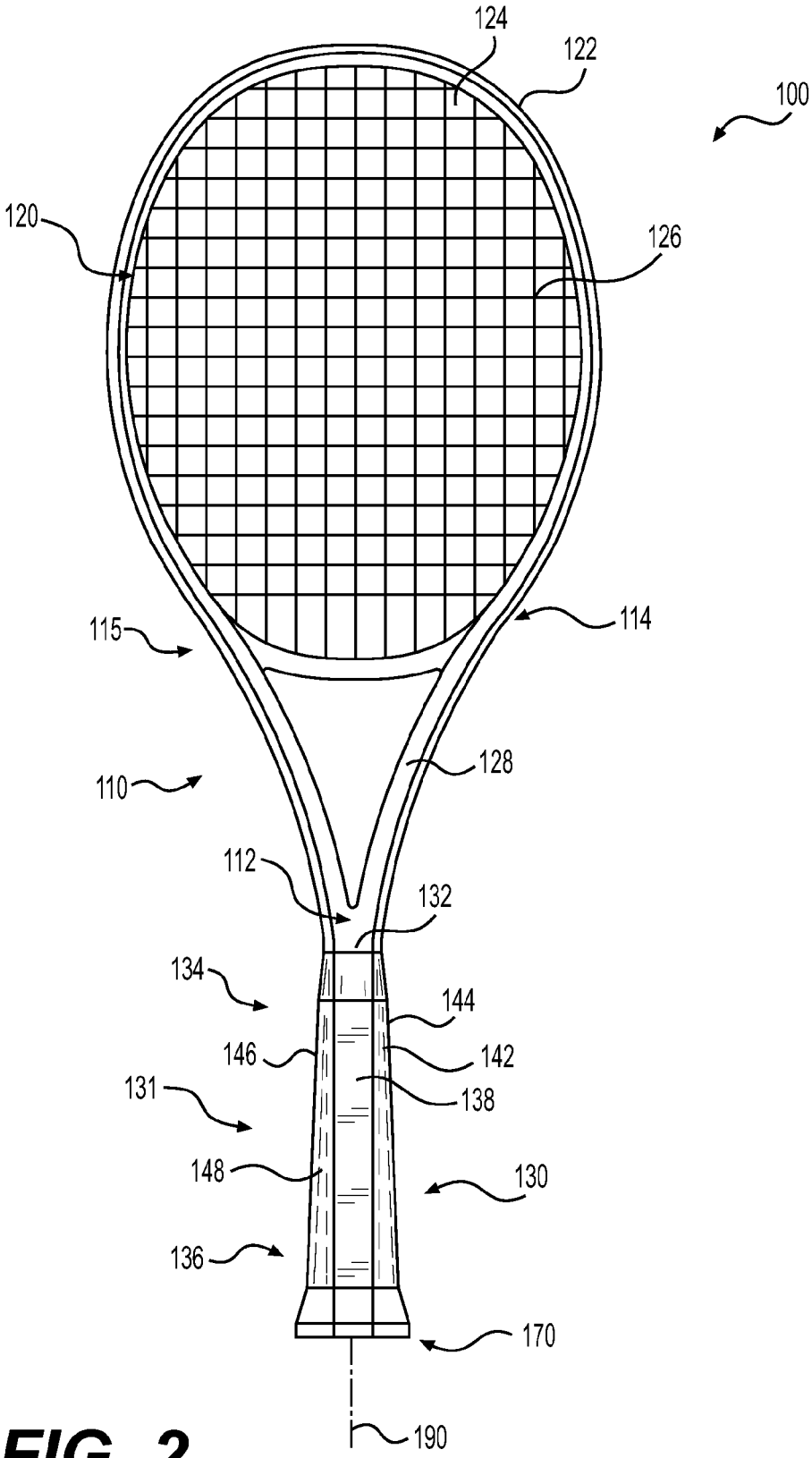
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FIG. 2

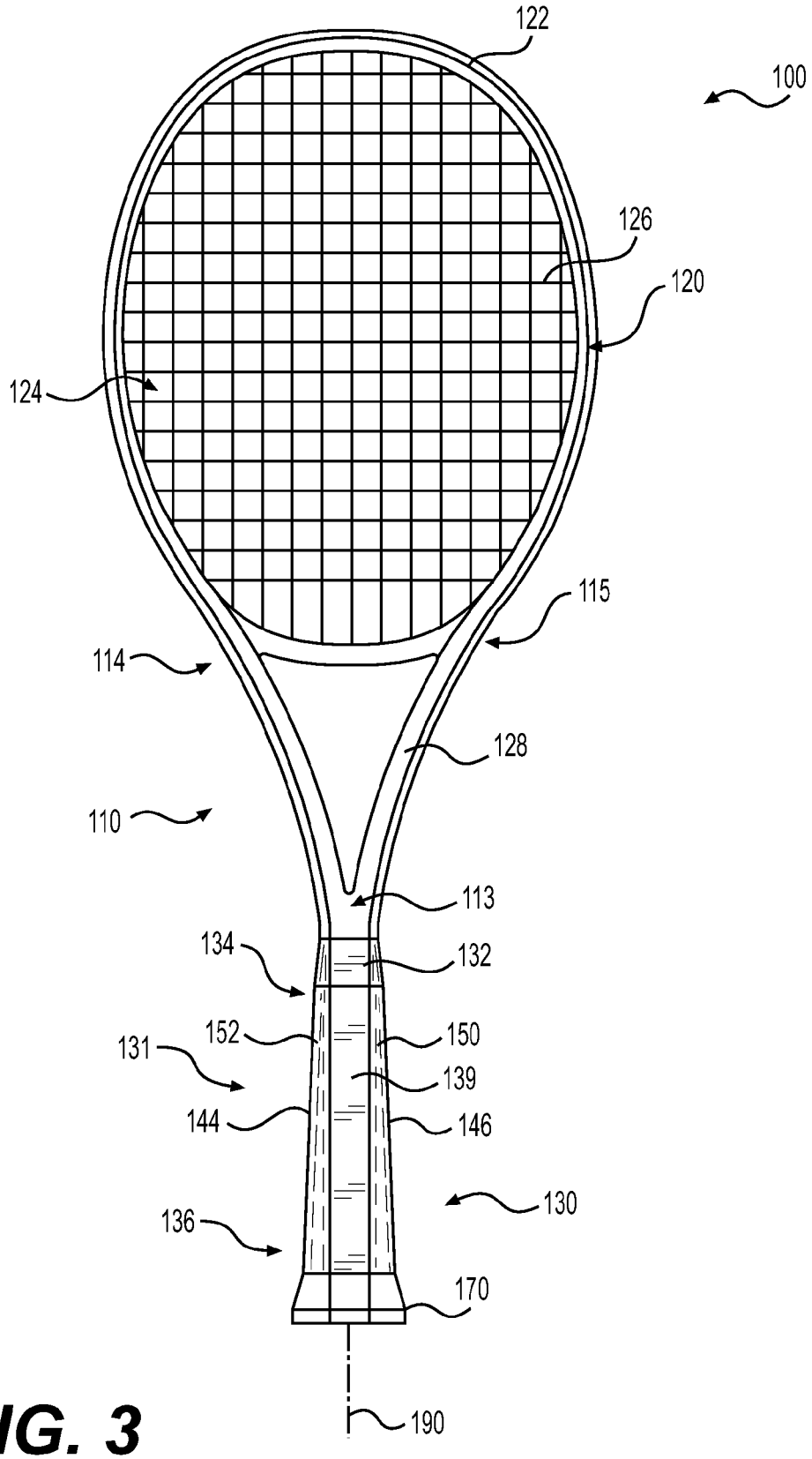
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FIG. 3

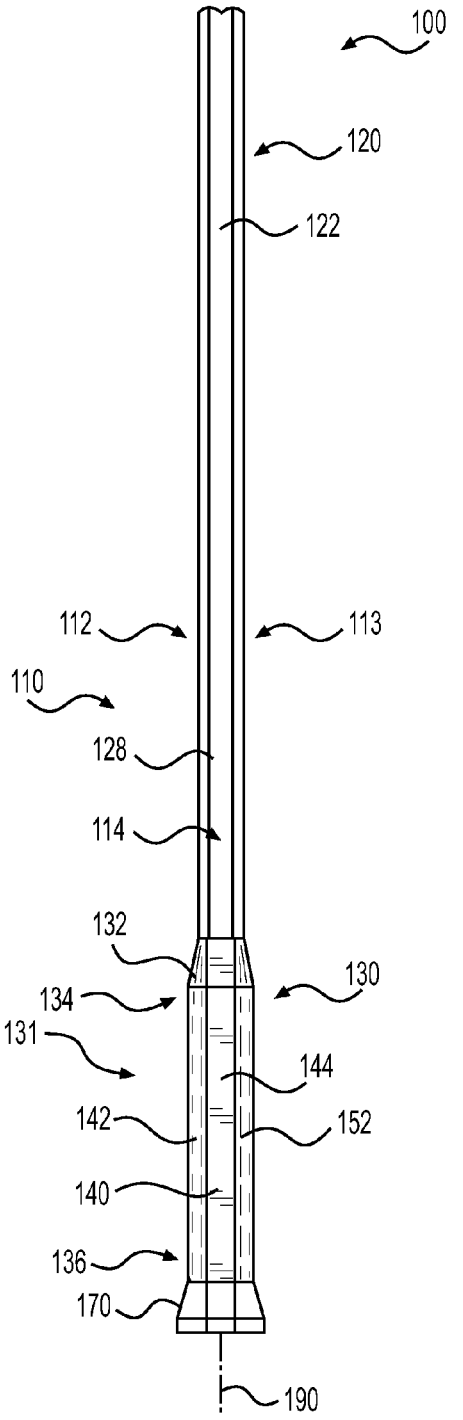
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FIG. 4

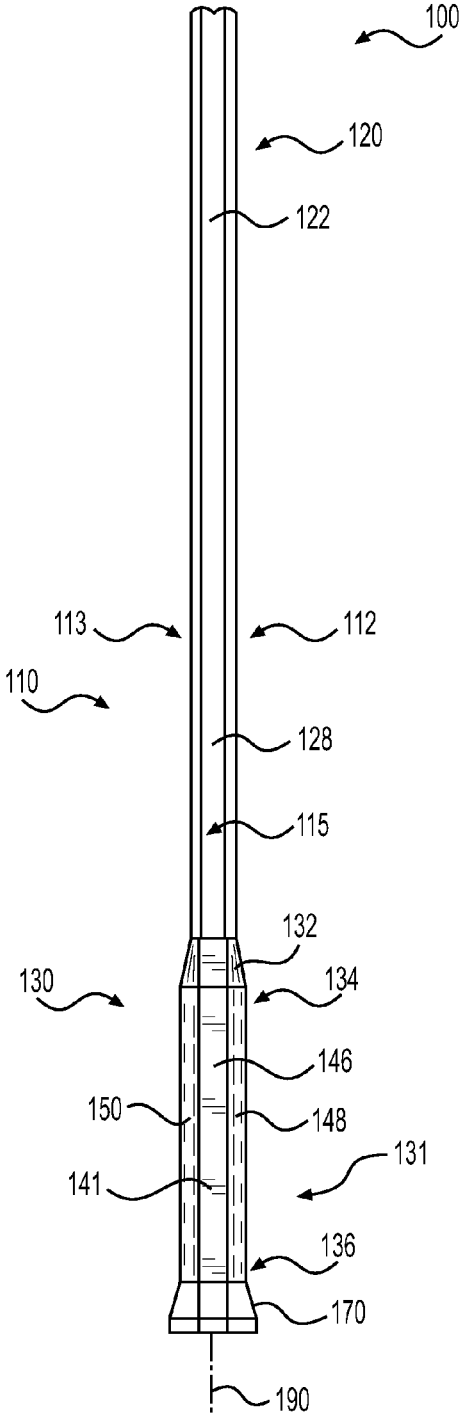
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FIG. 5

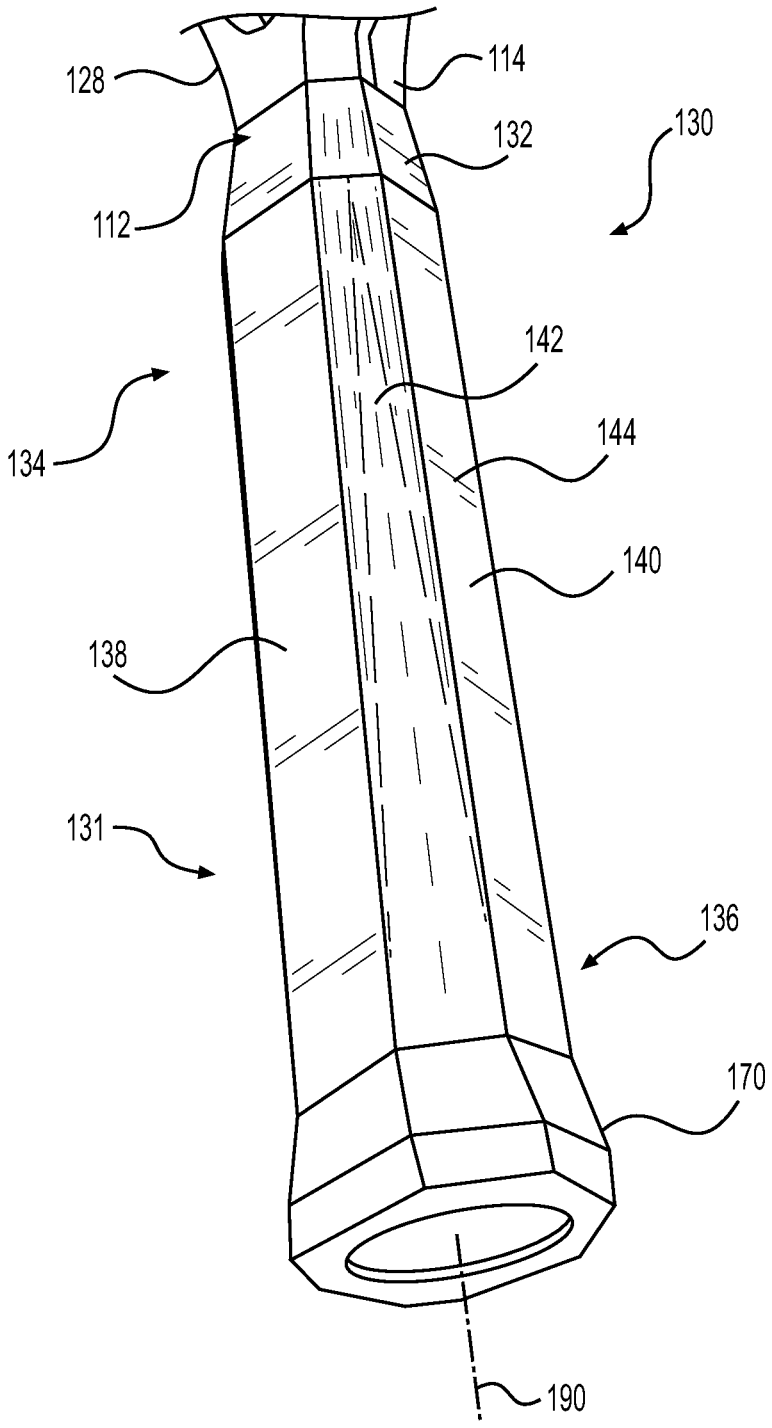

FIG. 6

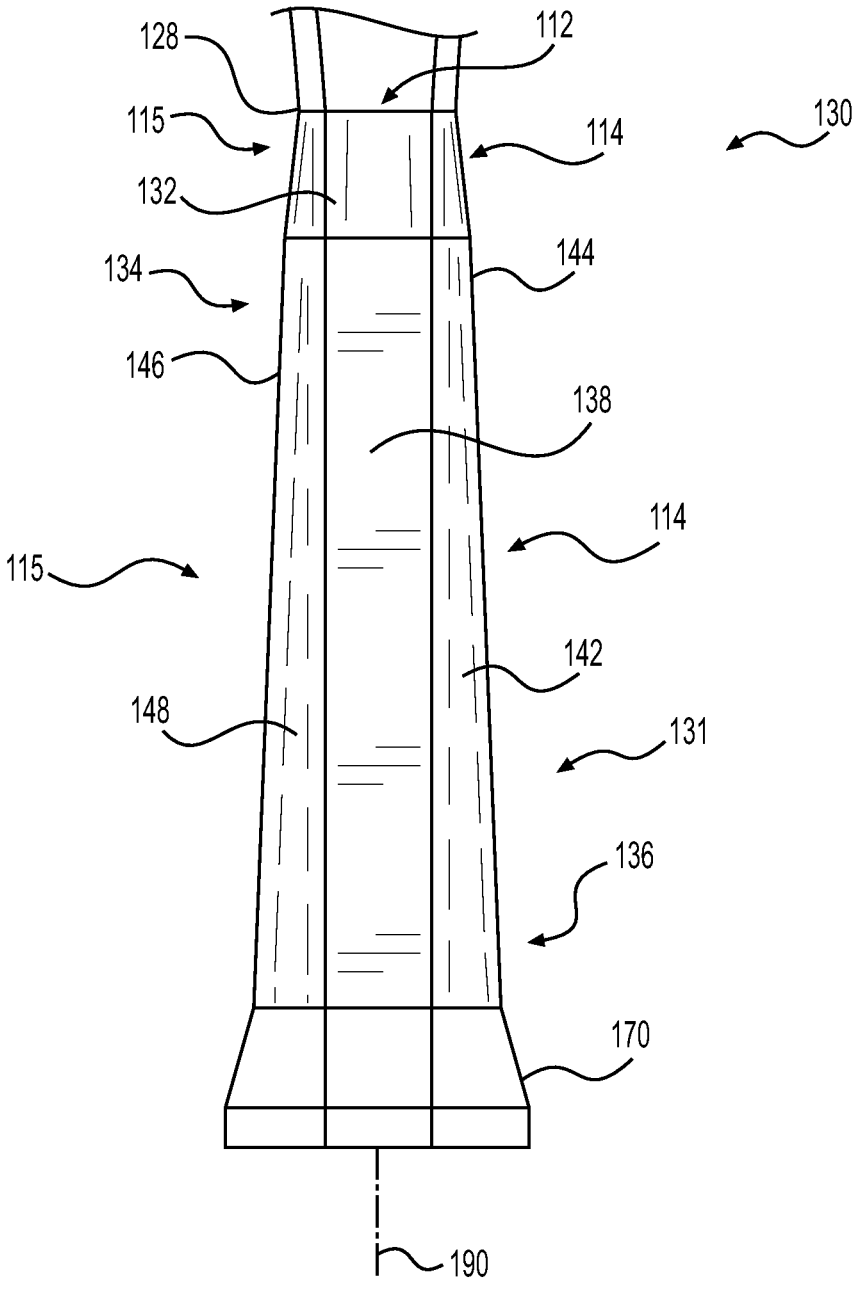
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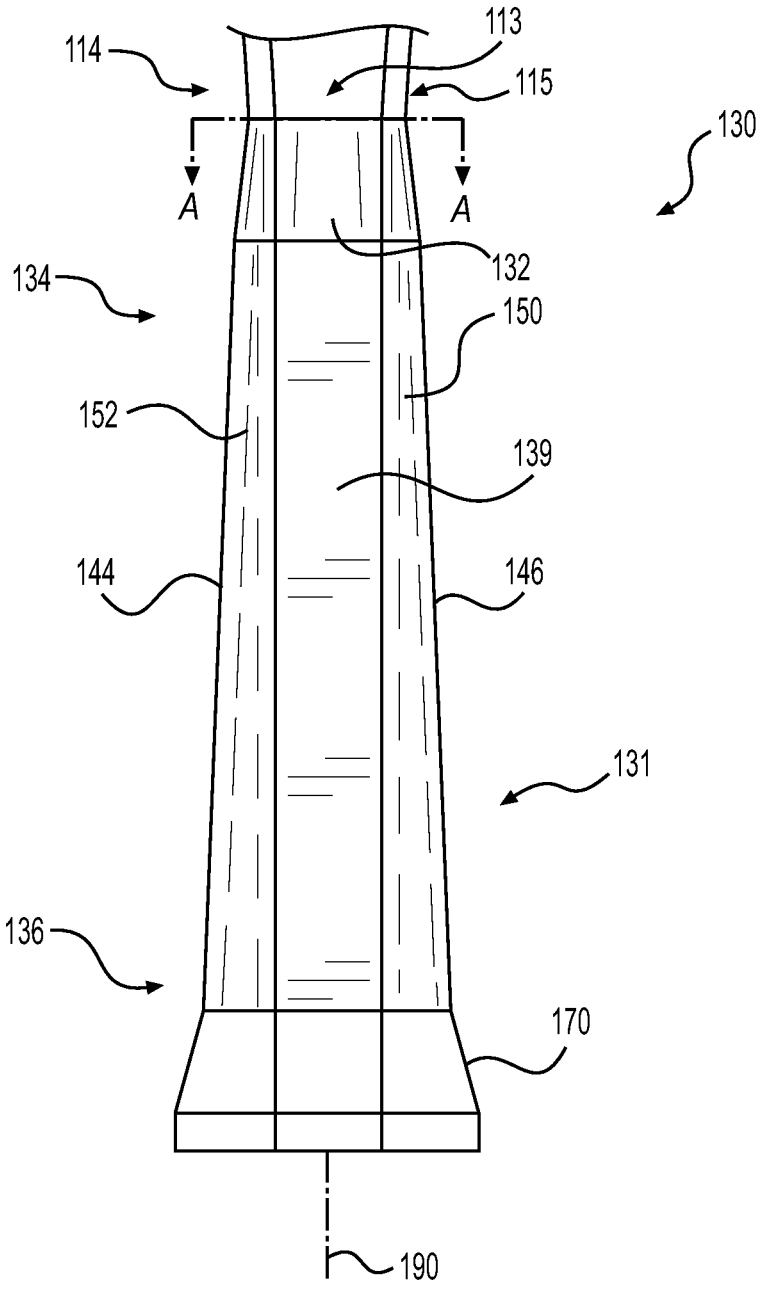
FIG. 7



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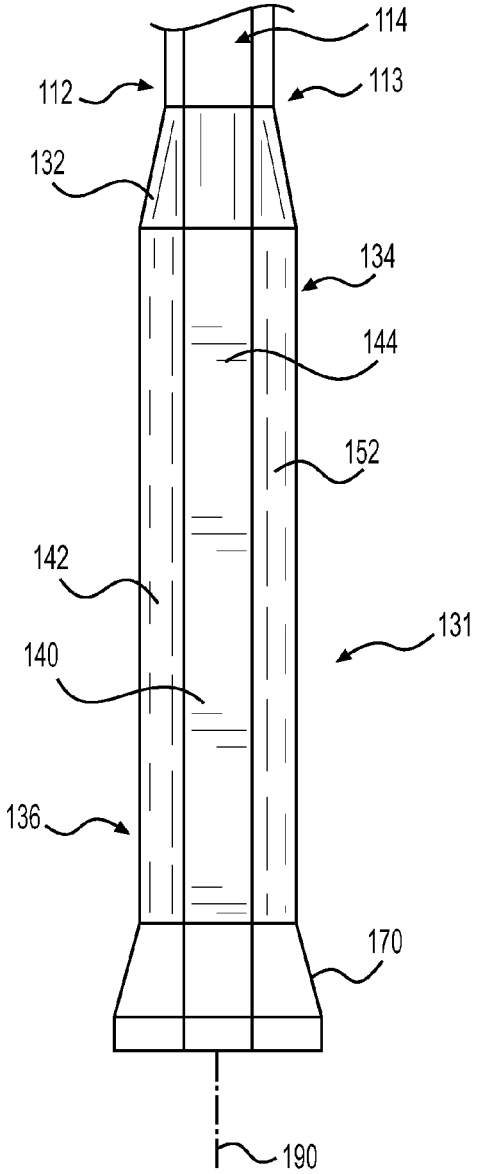
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FIG. 9

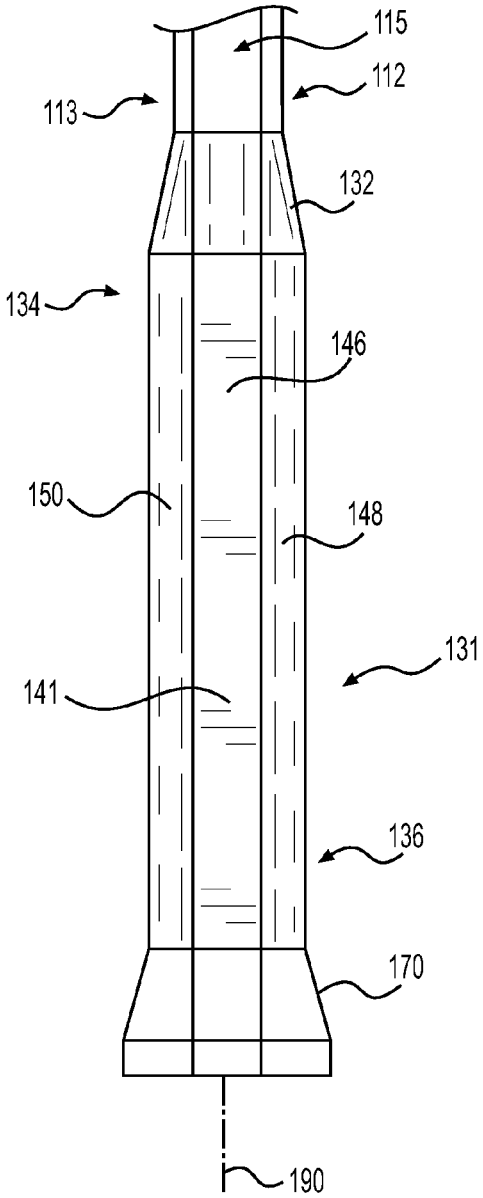
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FIG. 10

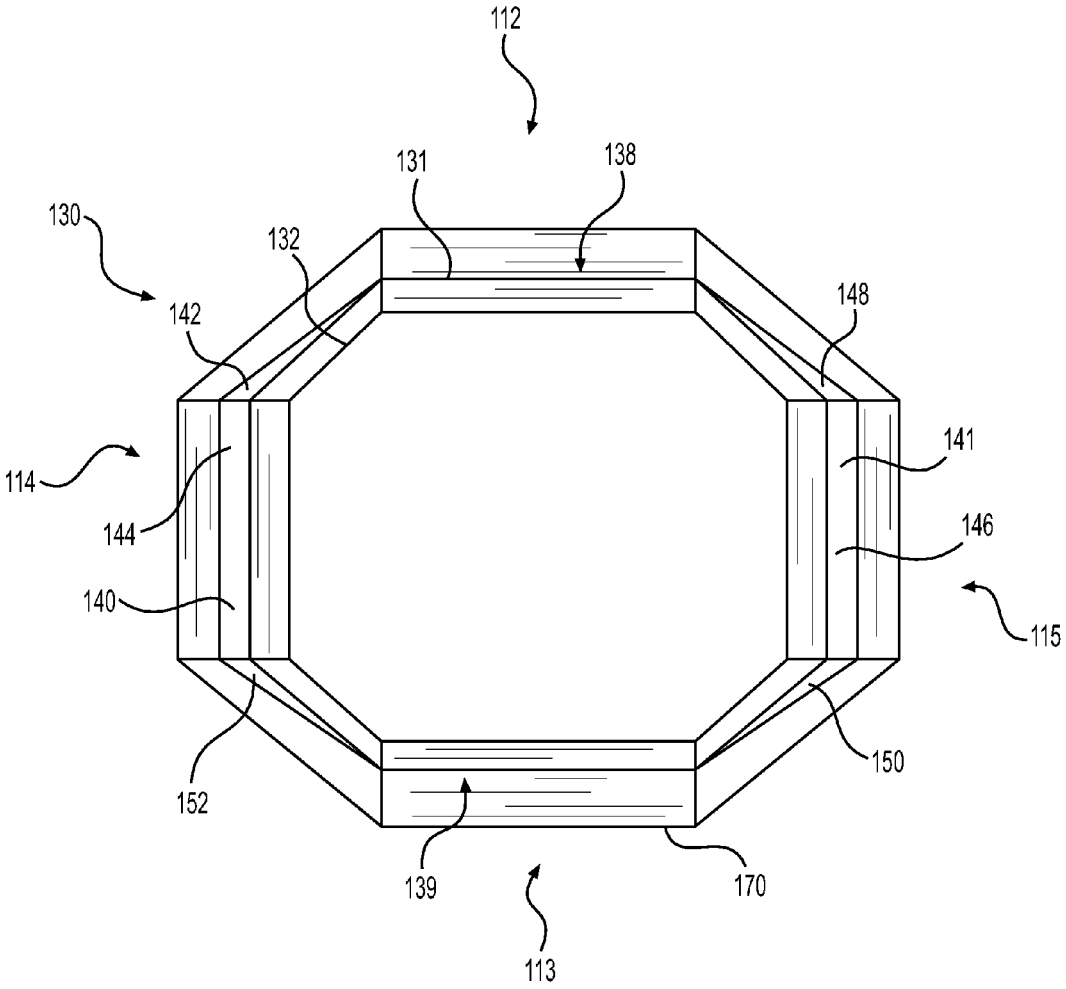
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FIG. 11

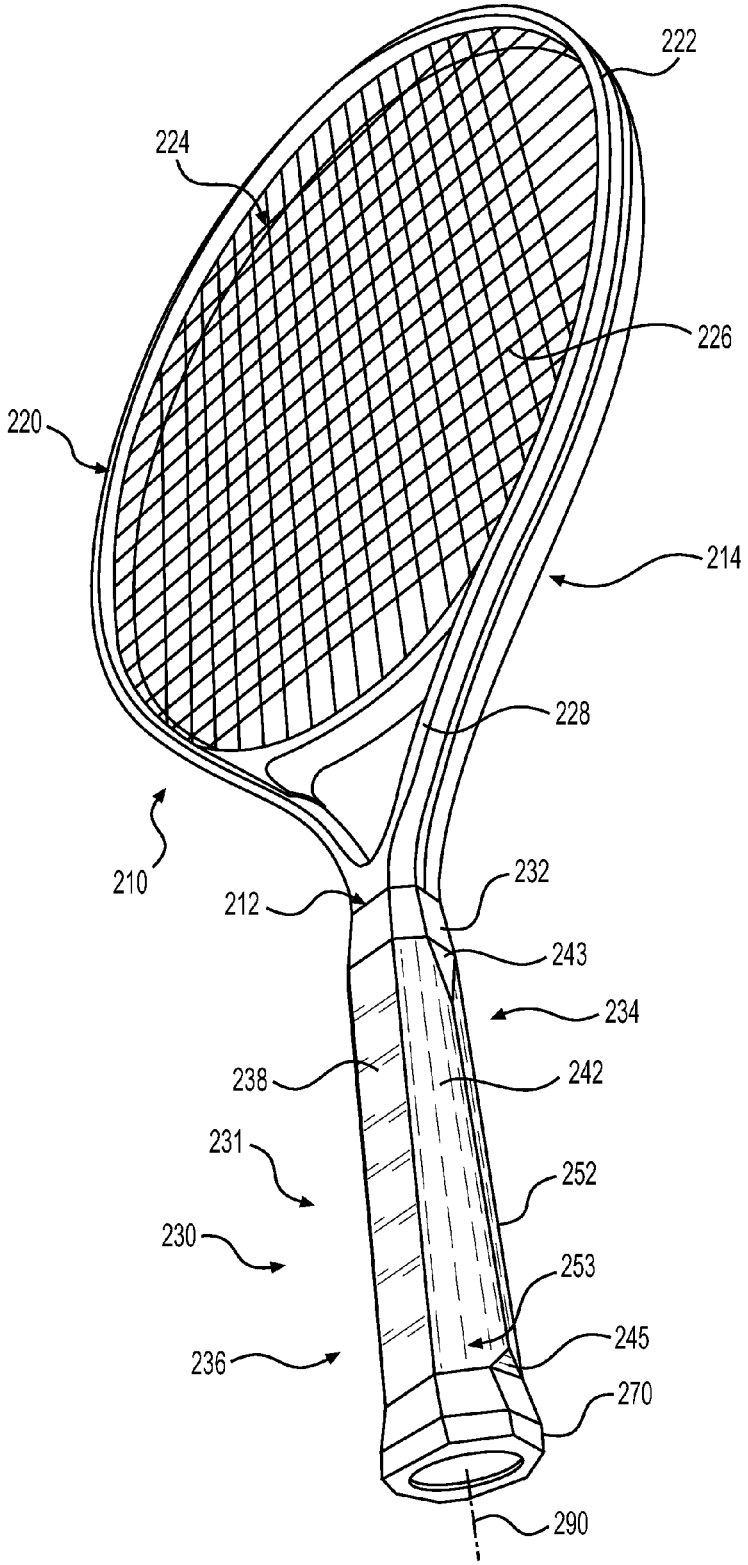
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FIG. 12

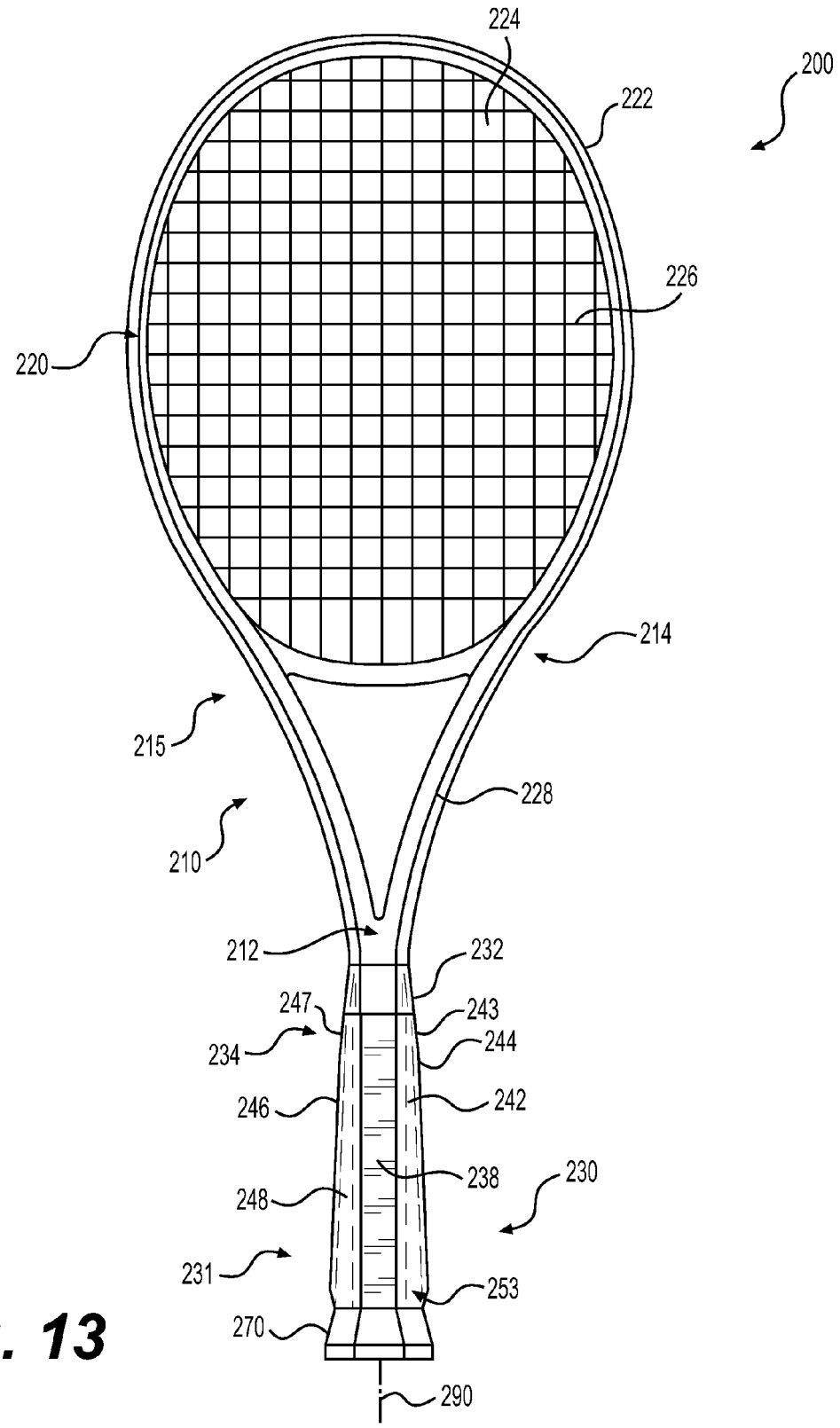
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FIG. 13

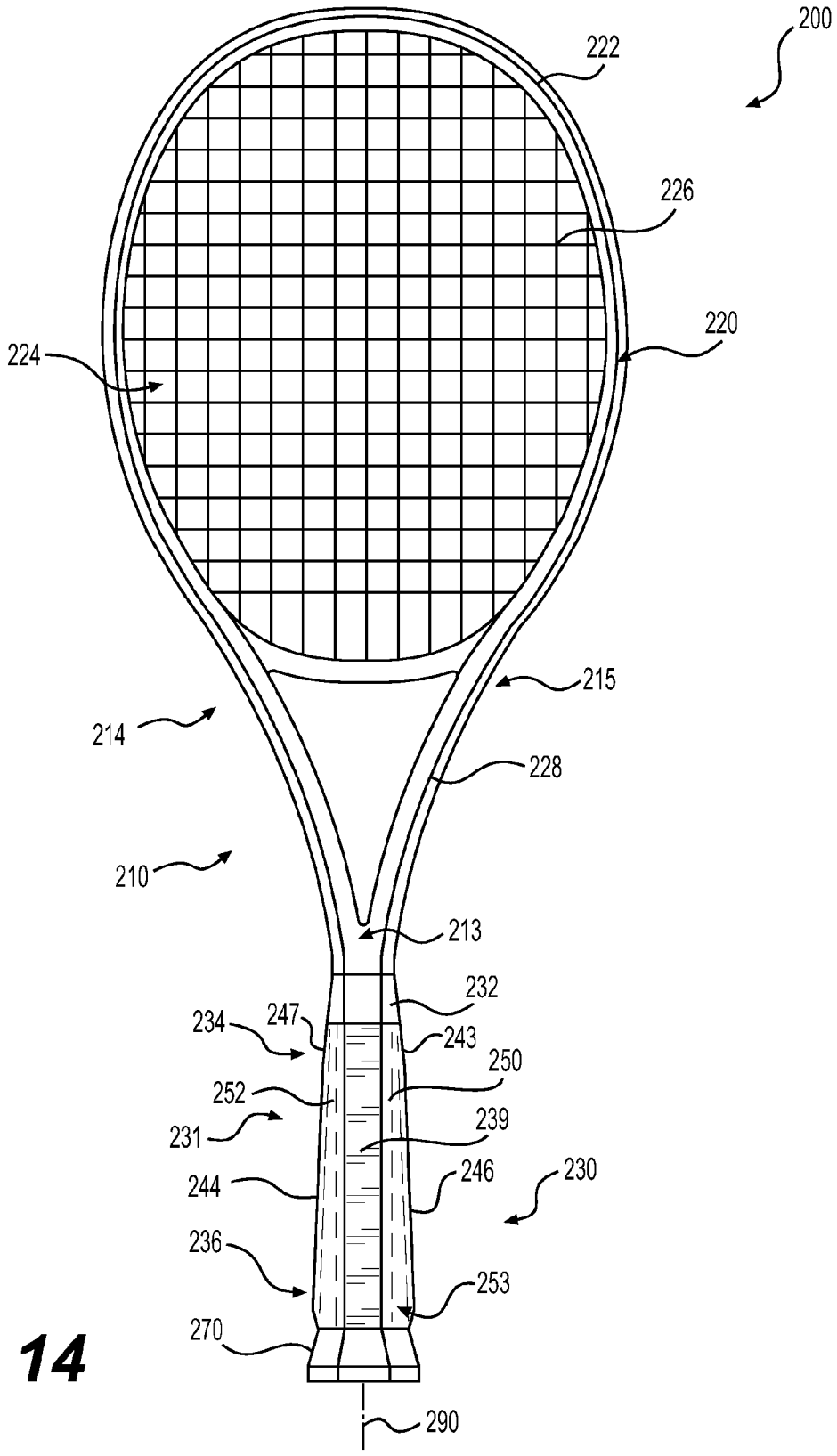
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FIG. 14

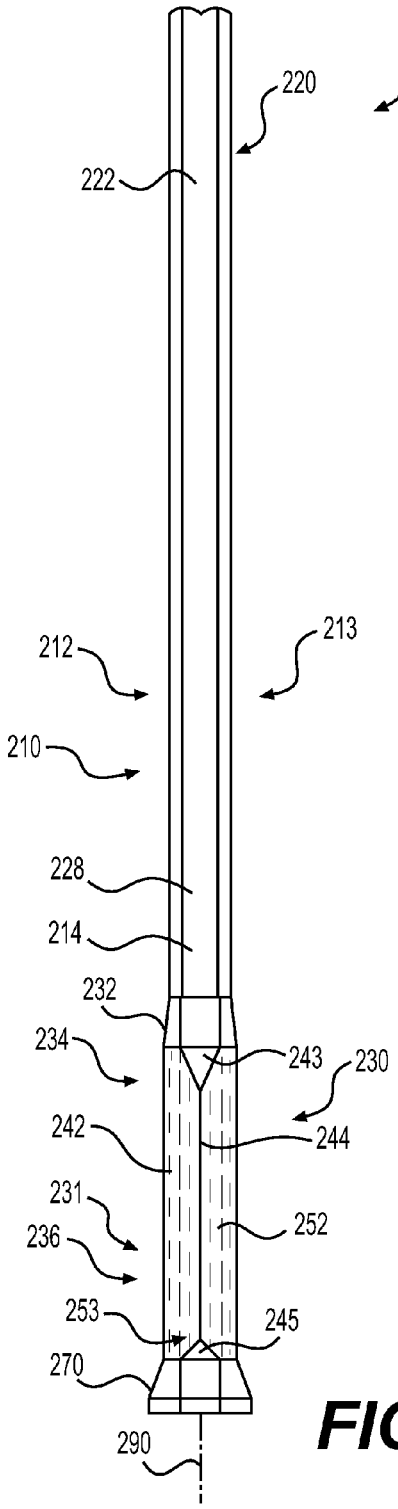
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FIG. 15

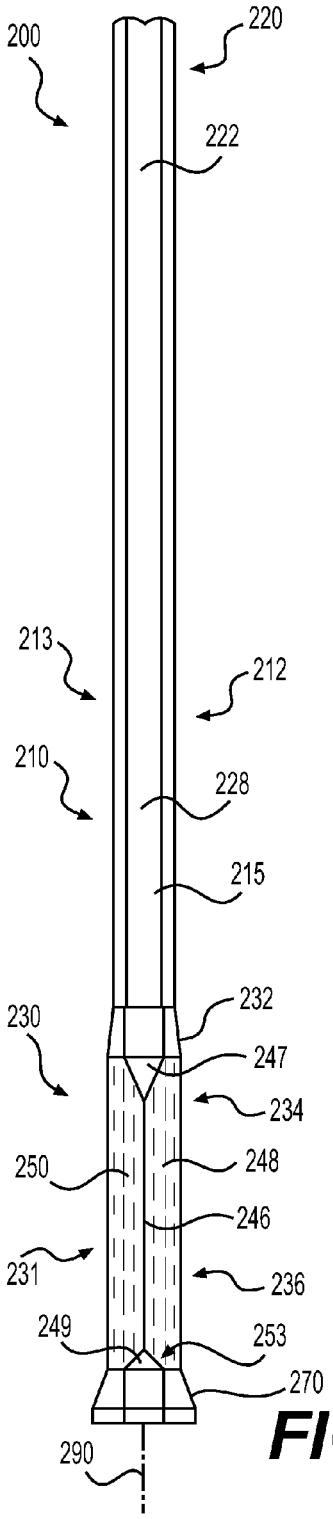
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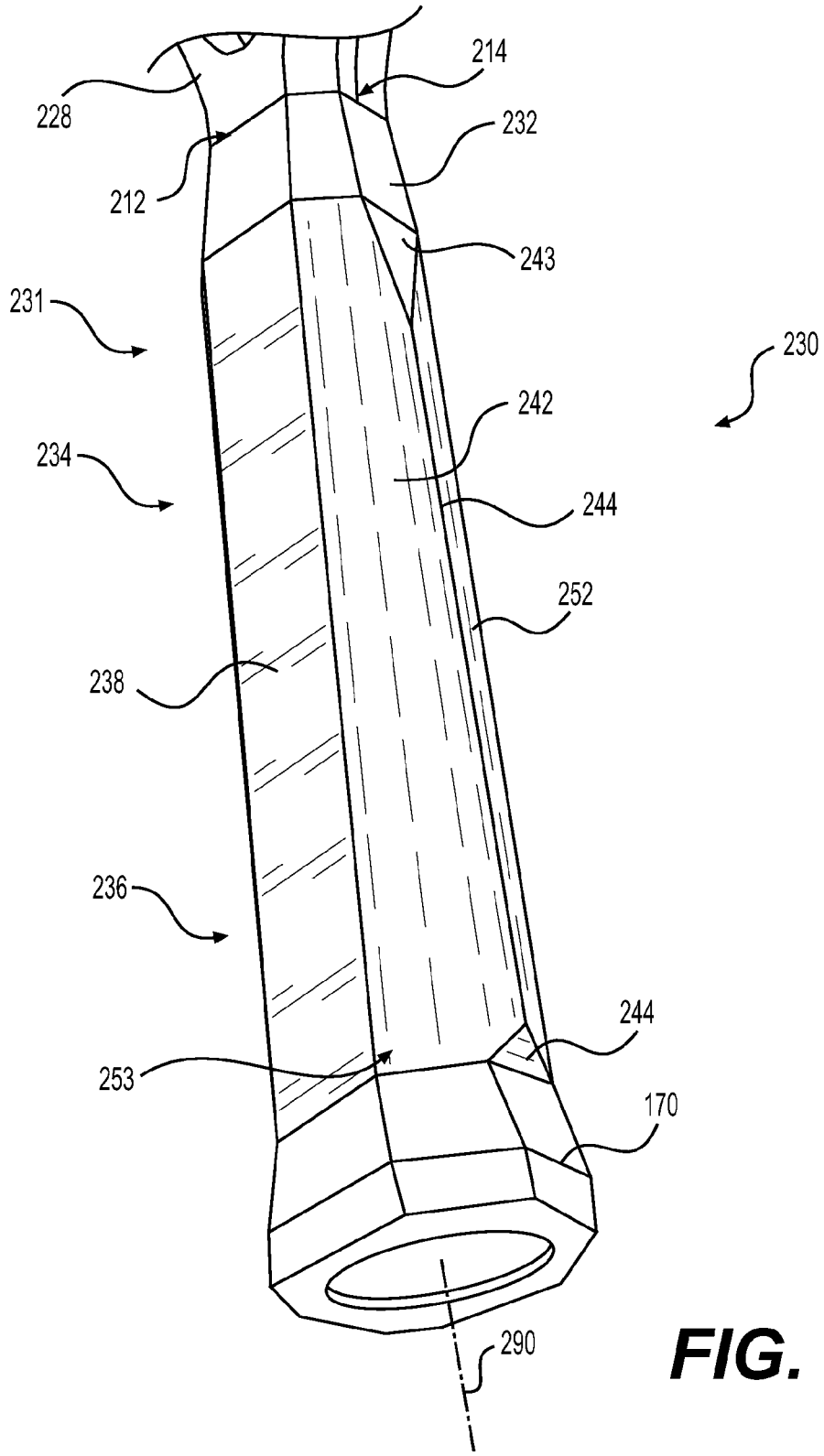
FIG. 16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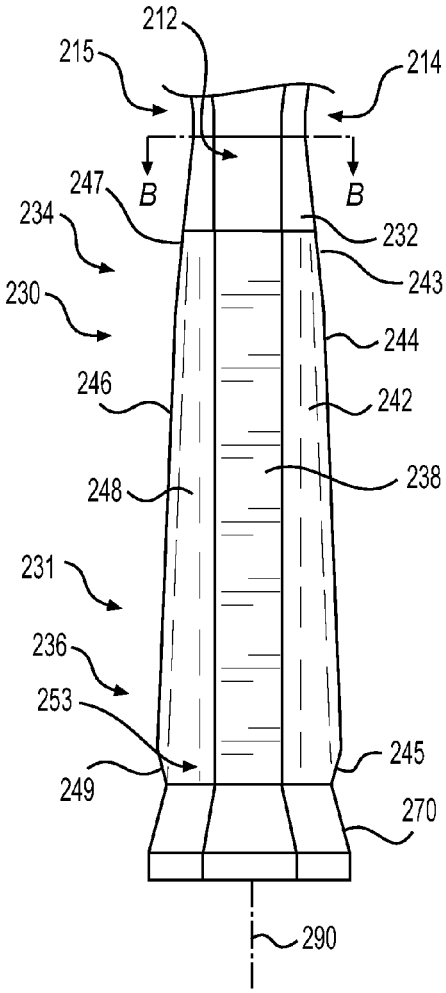
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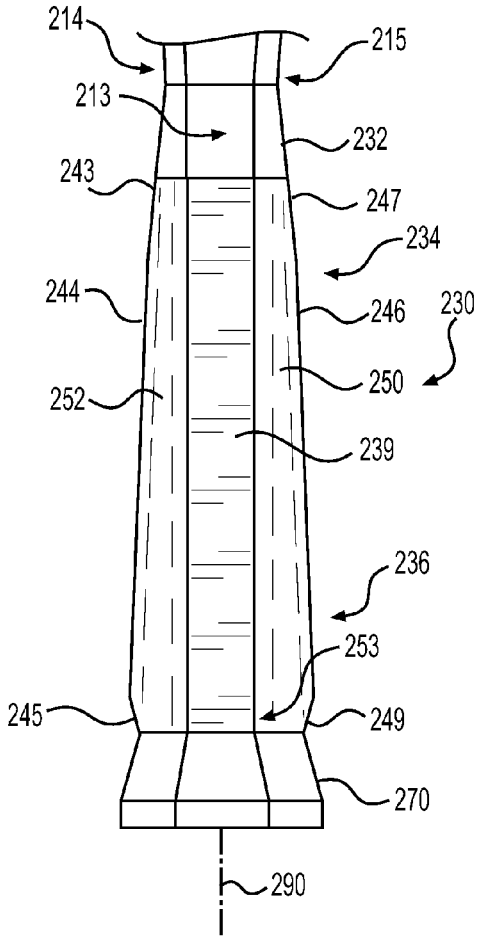
FIG. 18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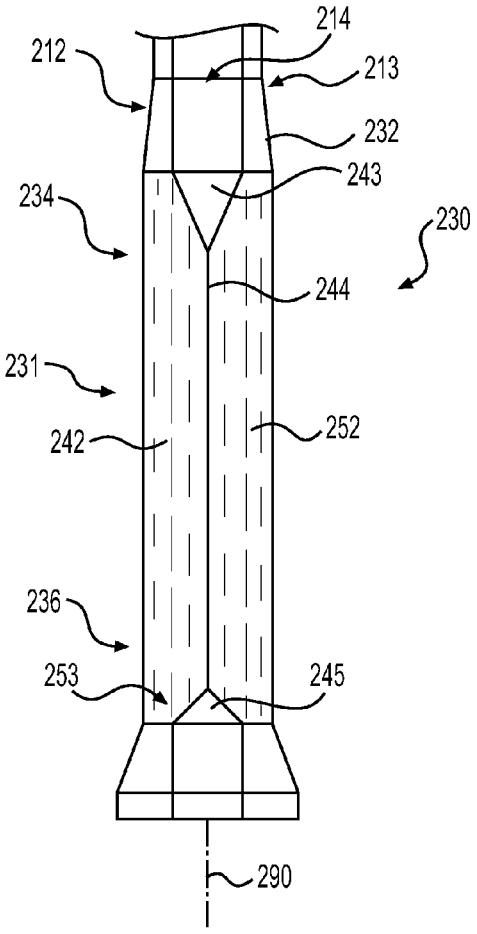
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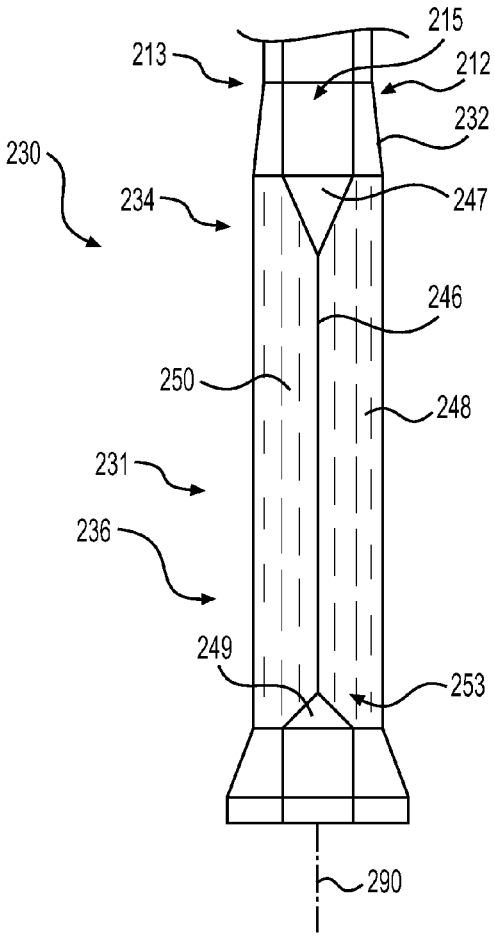
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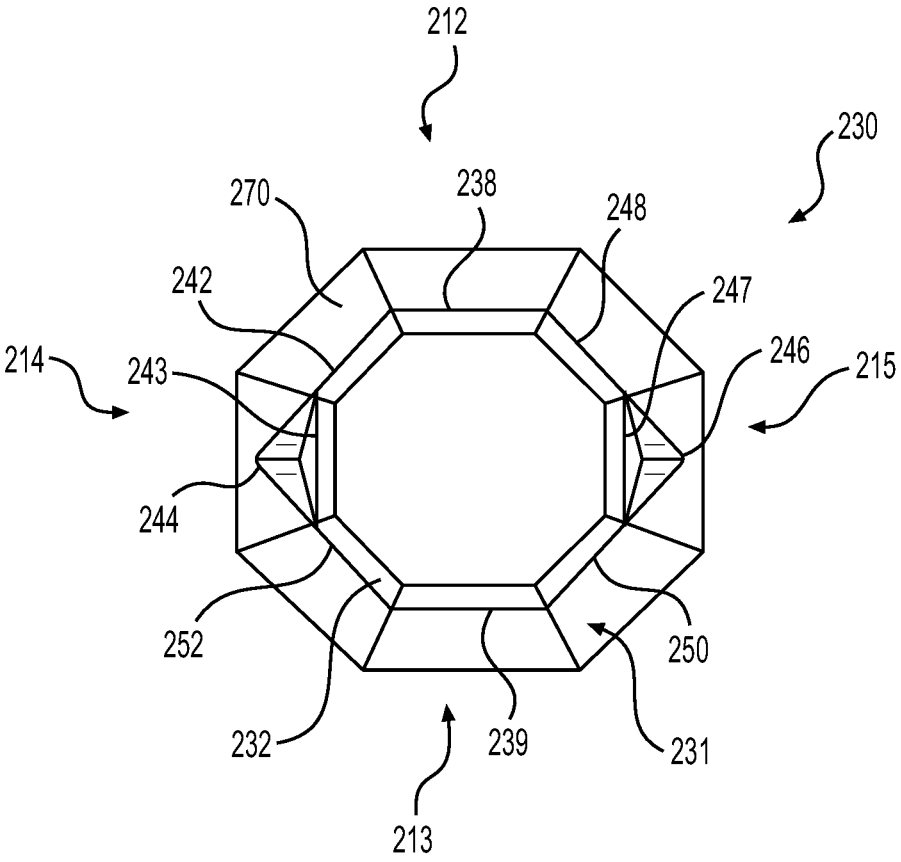
FIG. 21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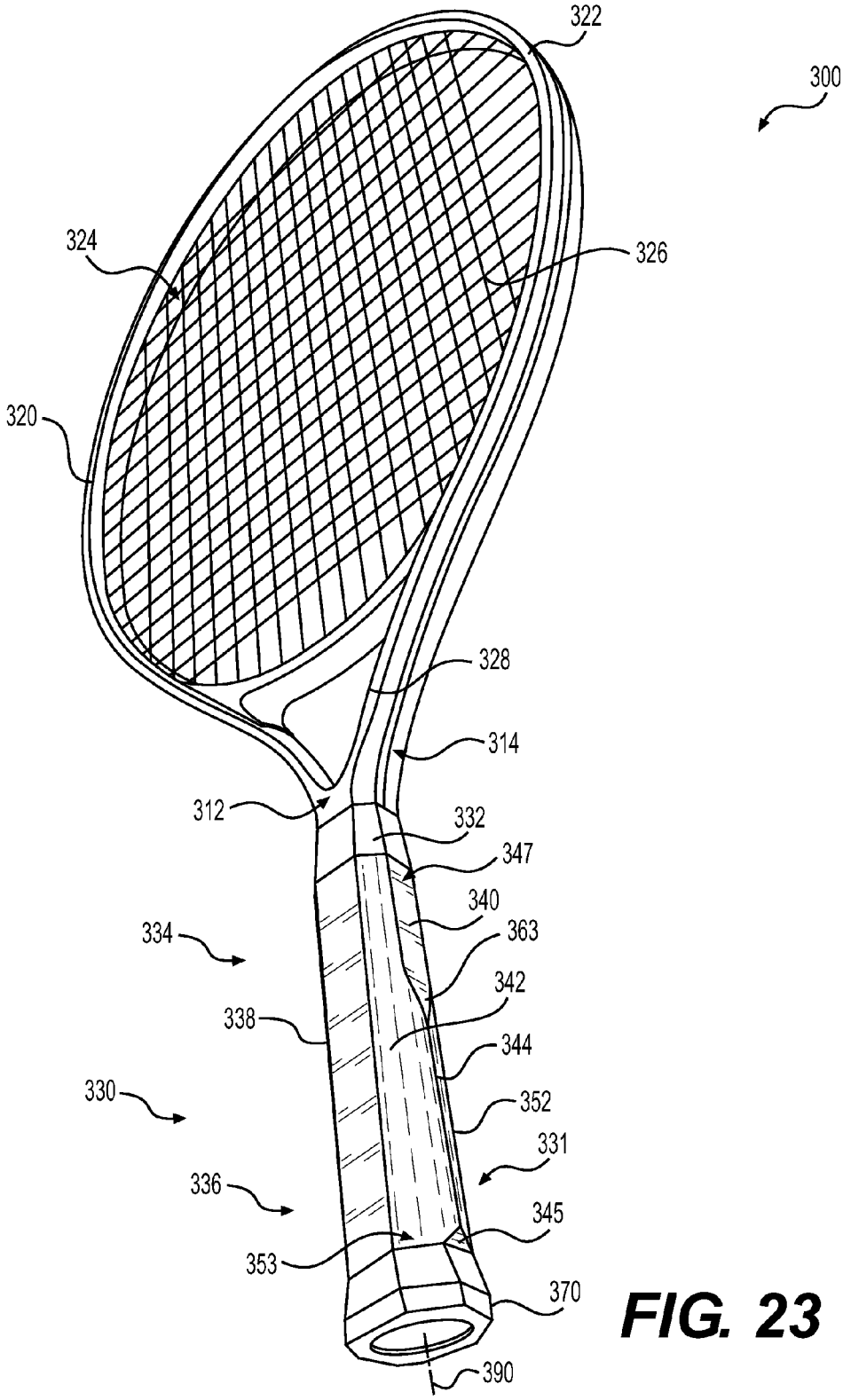
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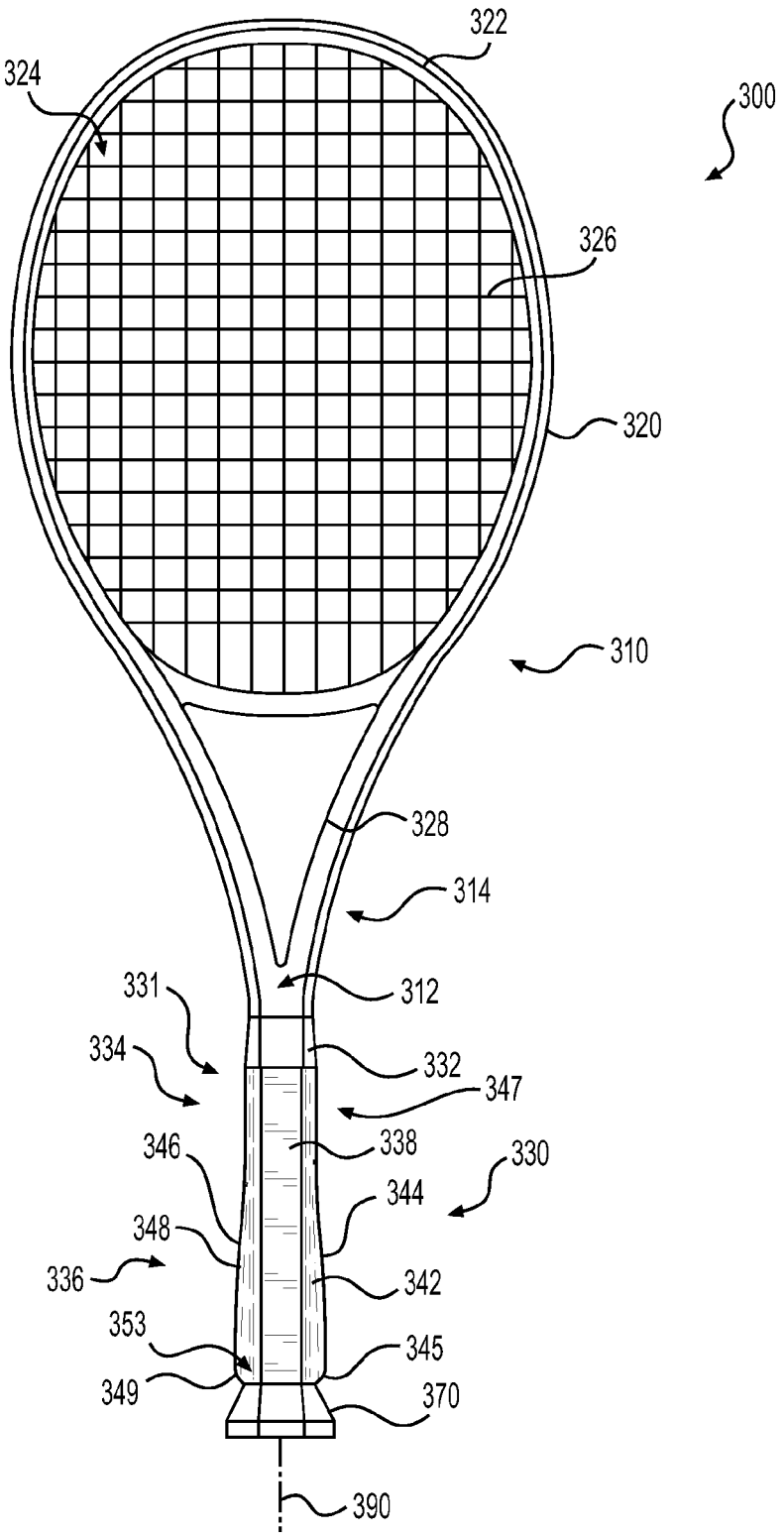
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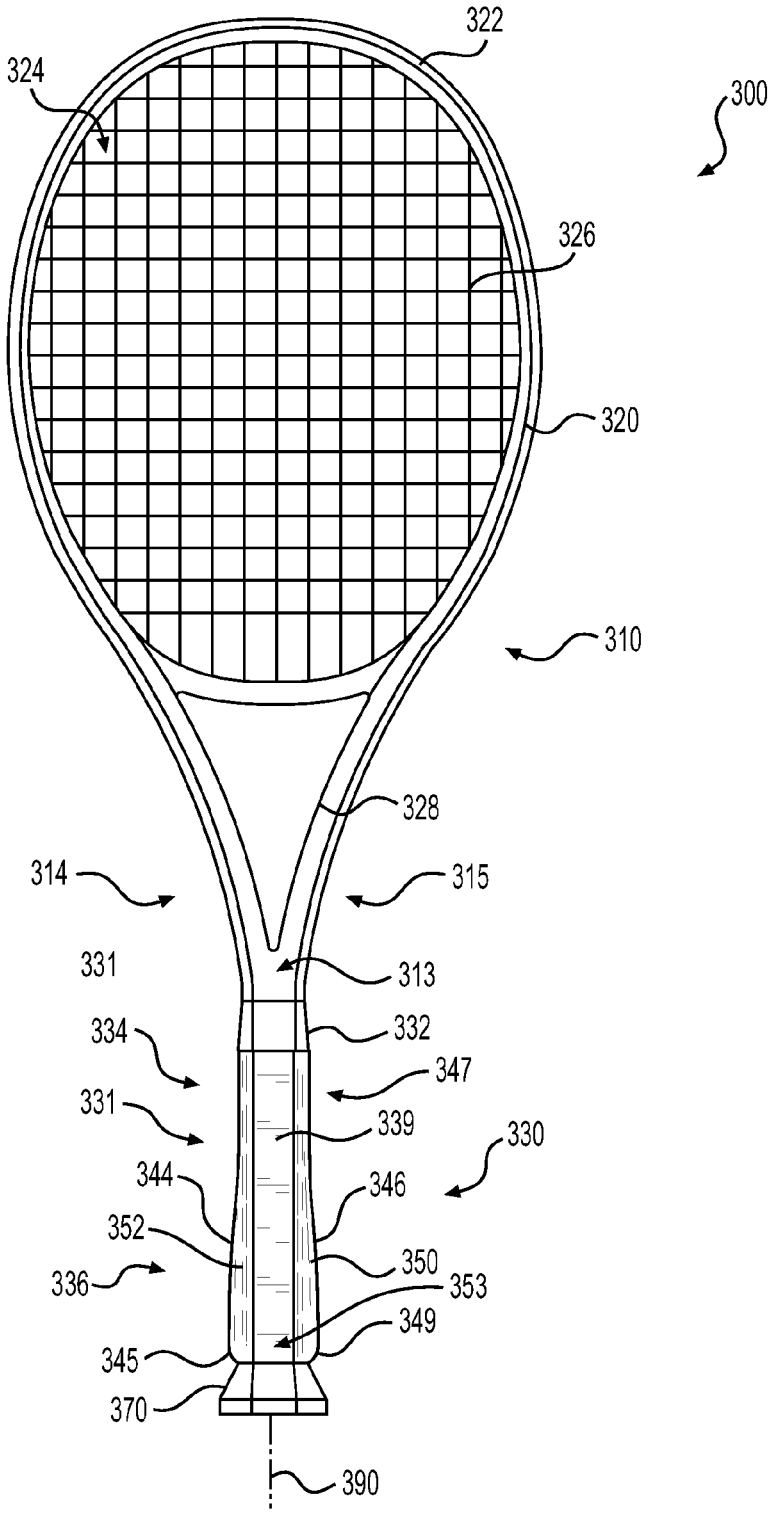
FIG. 24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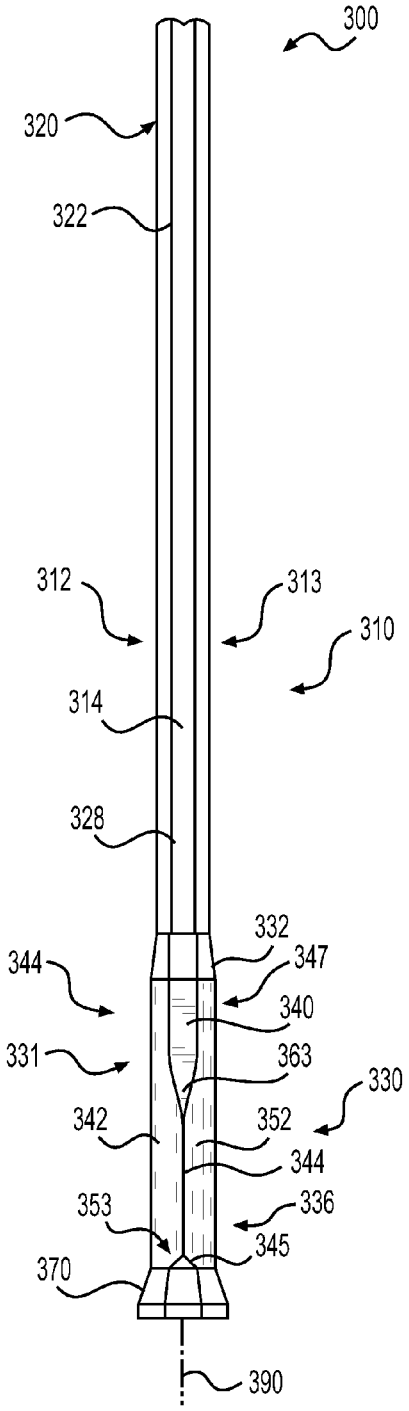
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FIG. 26

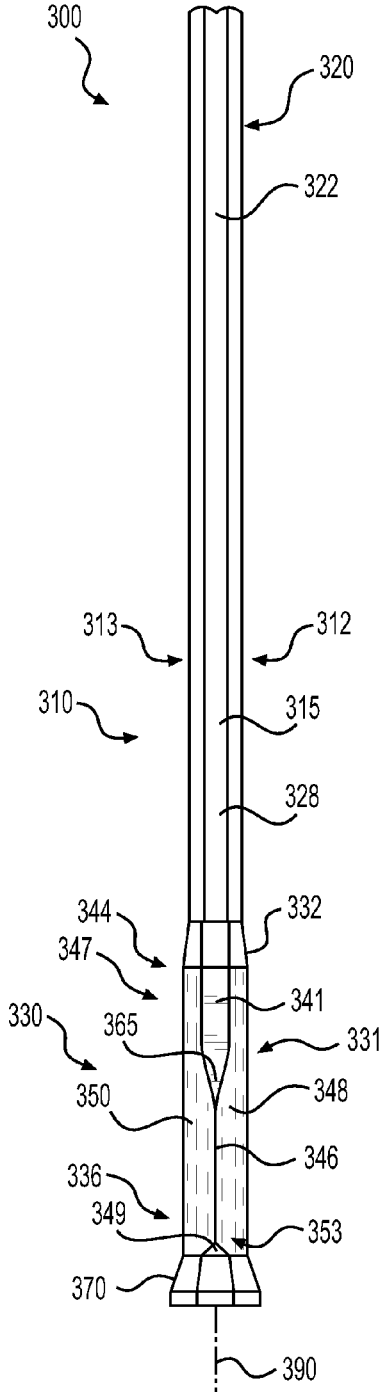
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FIG. 27

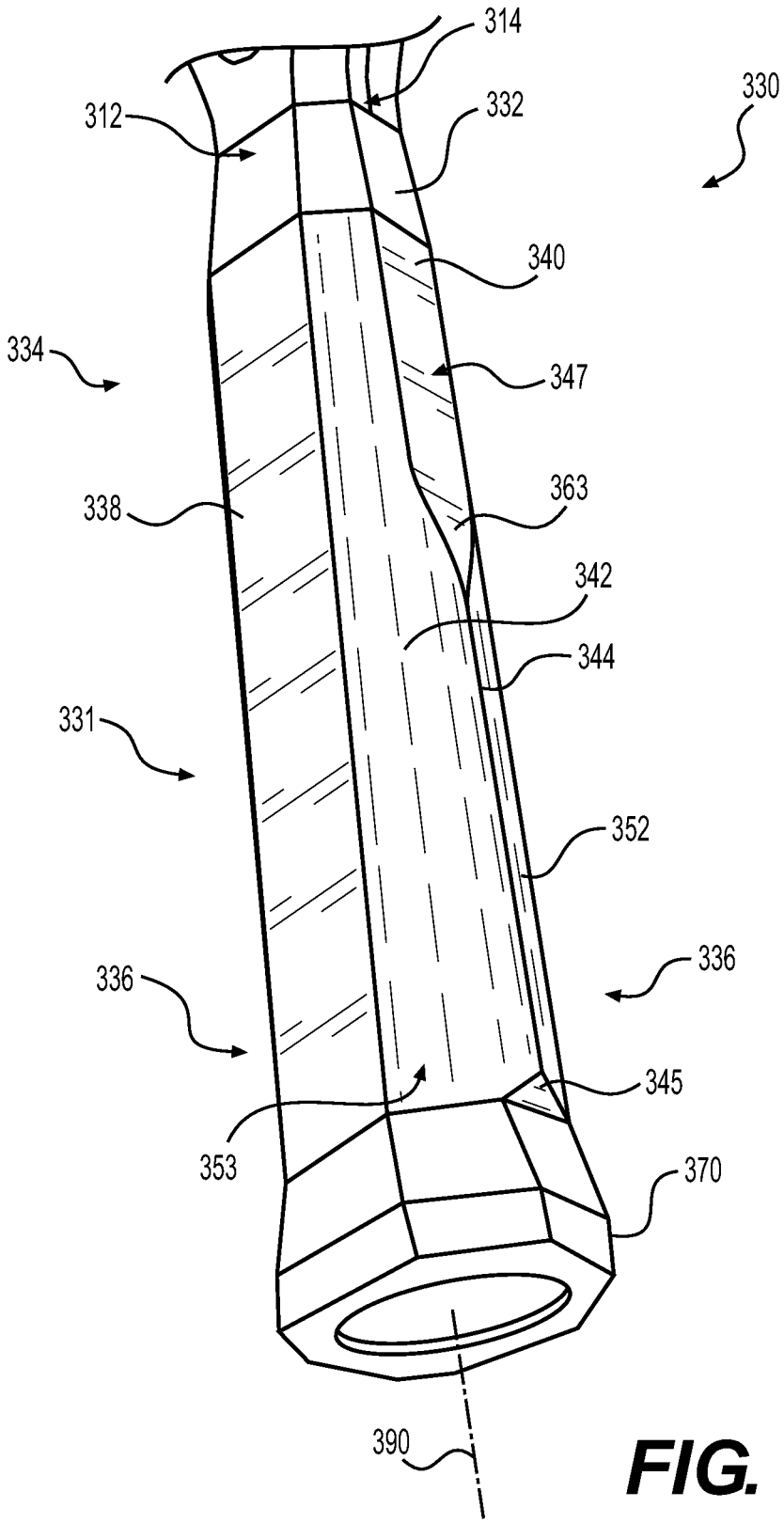
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FIG. 28

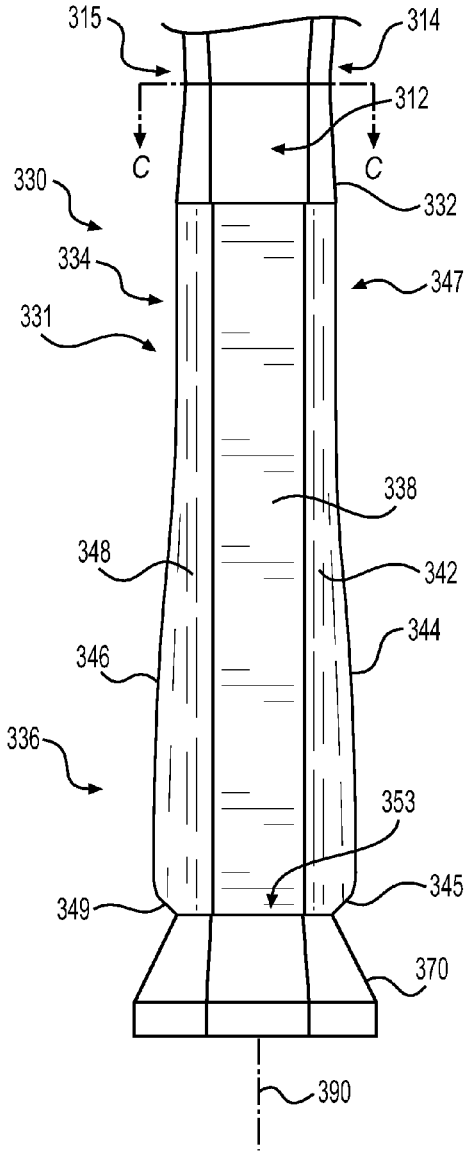
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FIG. 29

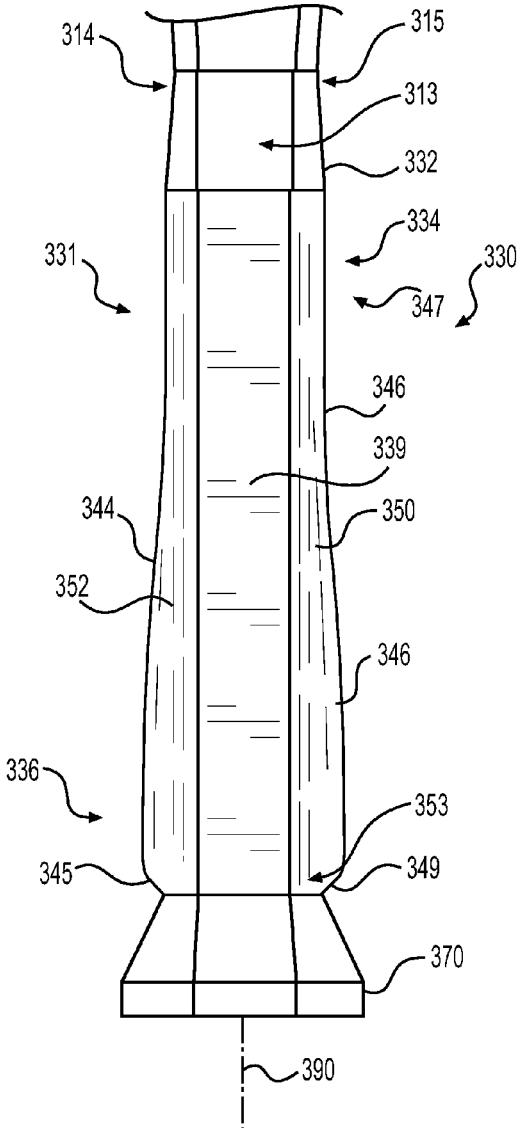
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FIG. 30

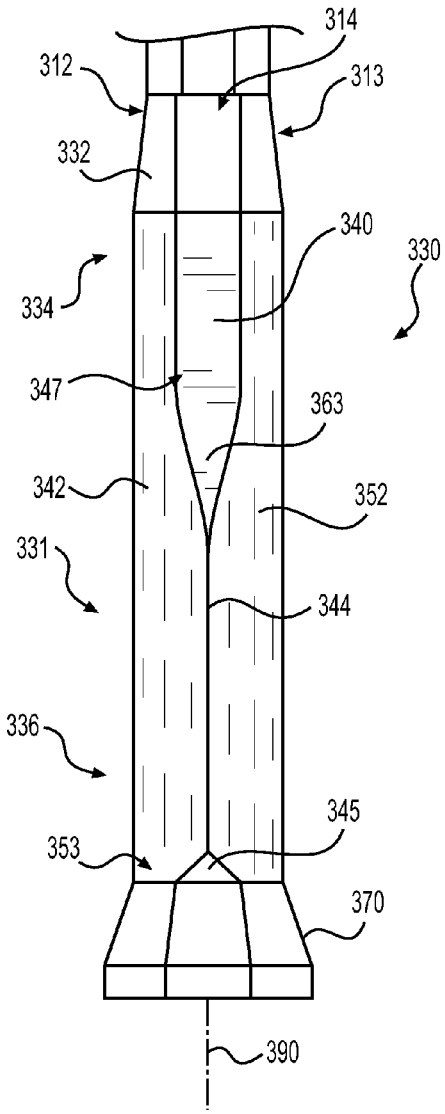
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FIG. 31

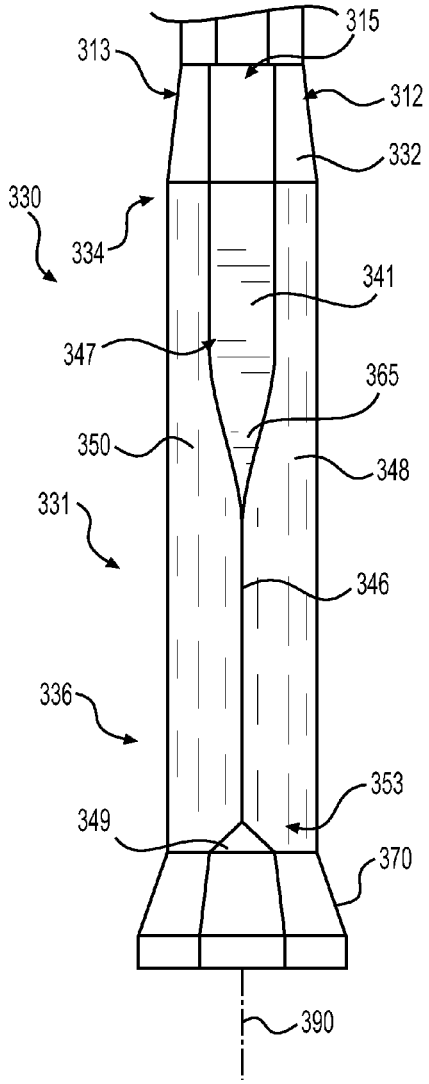
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FIG. 32

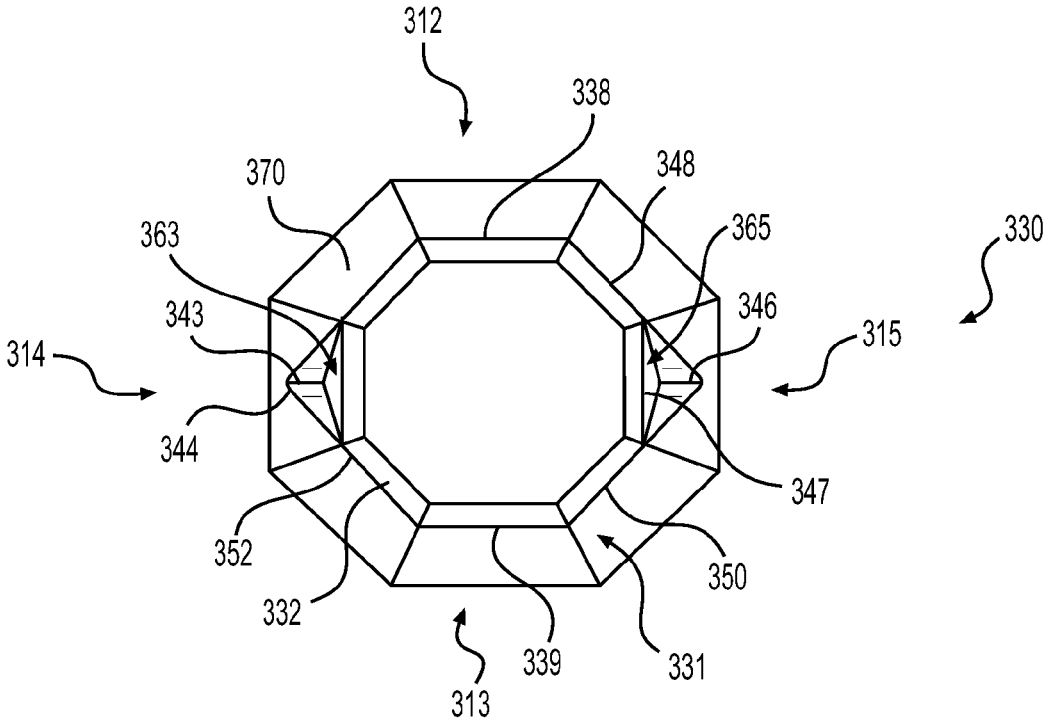
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FIG. 33

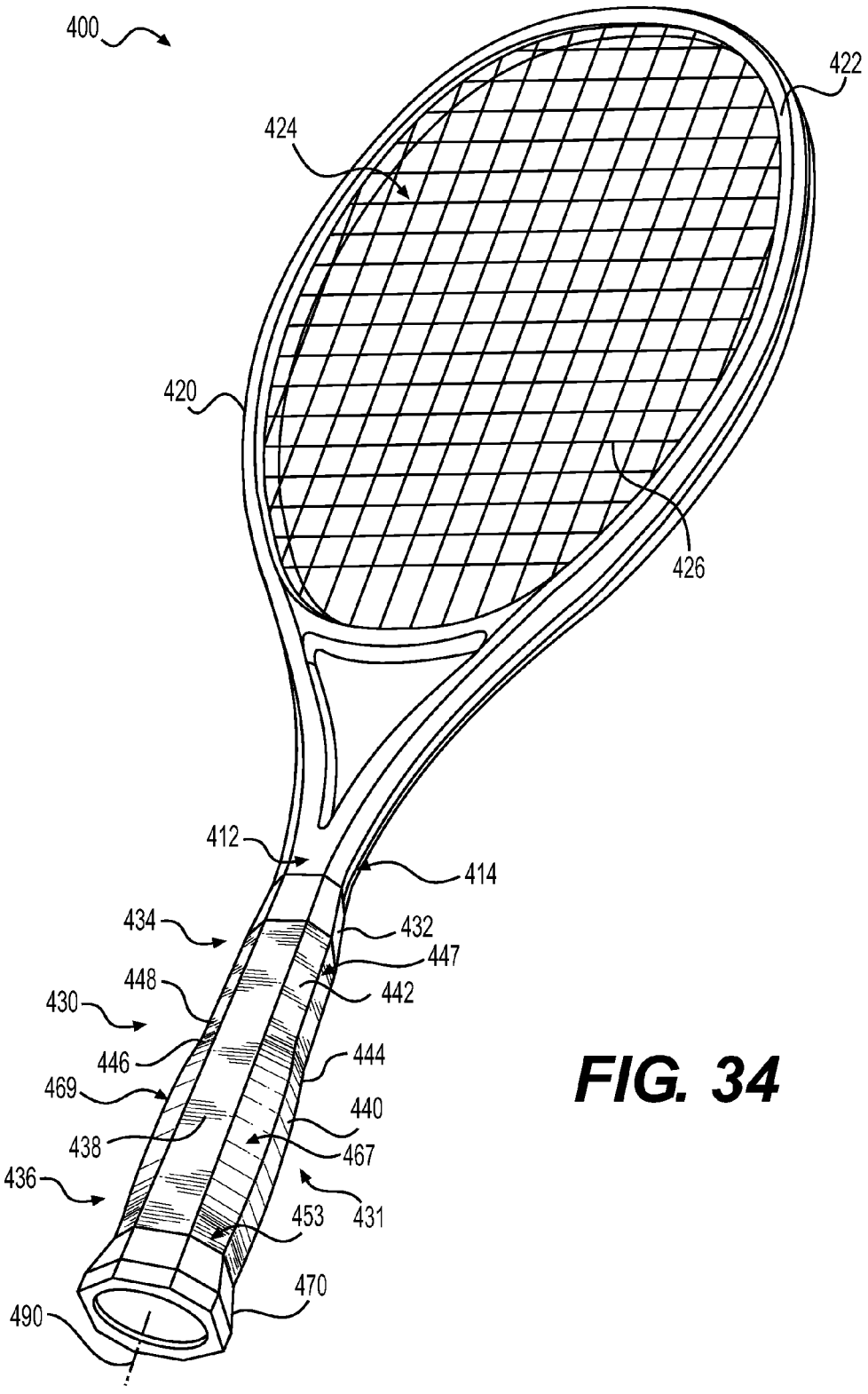
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FIG. 34

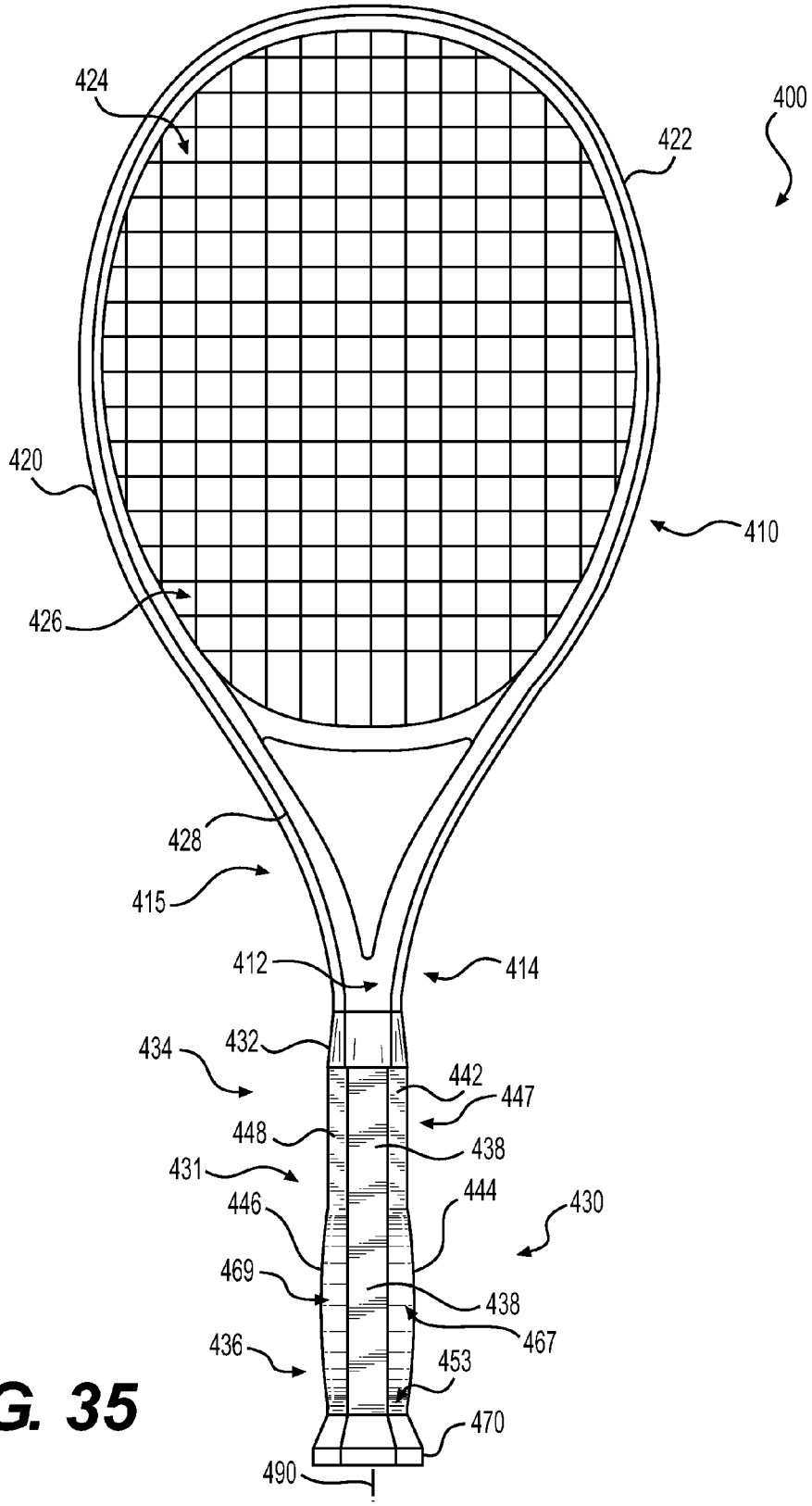
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FIG. 35

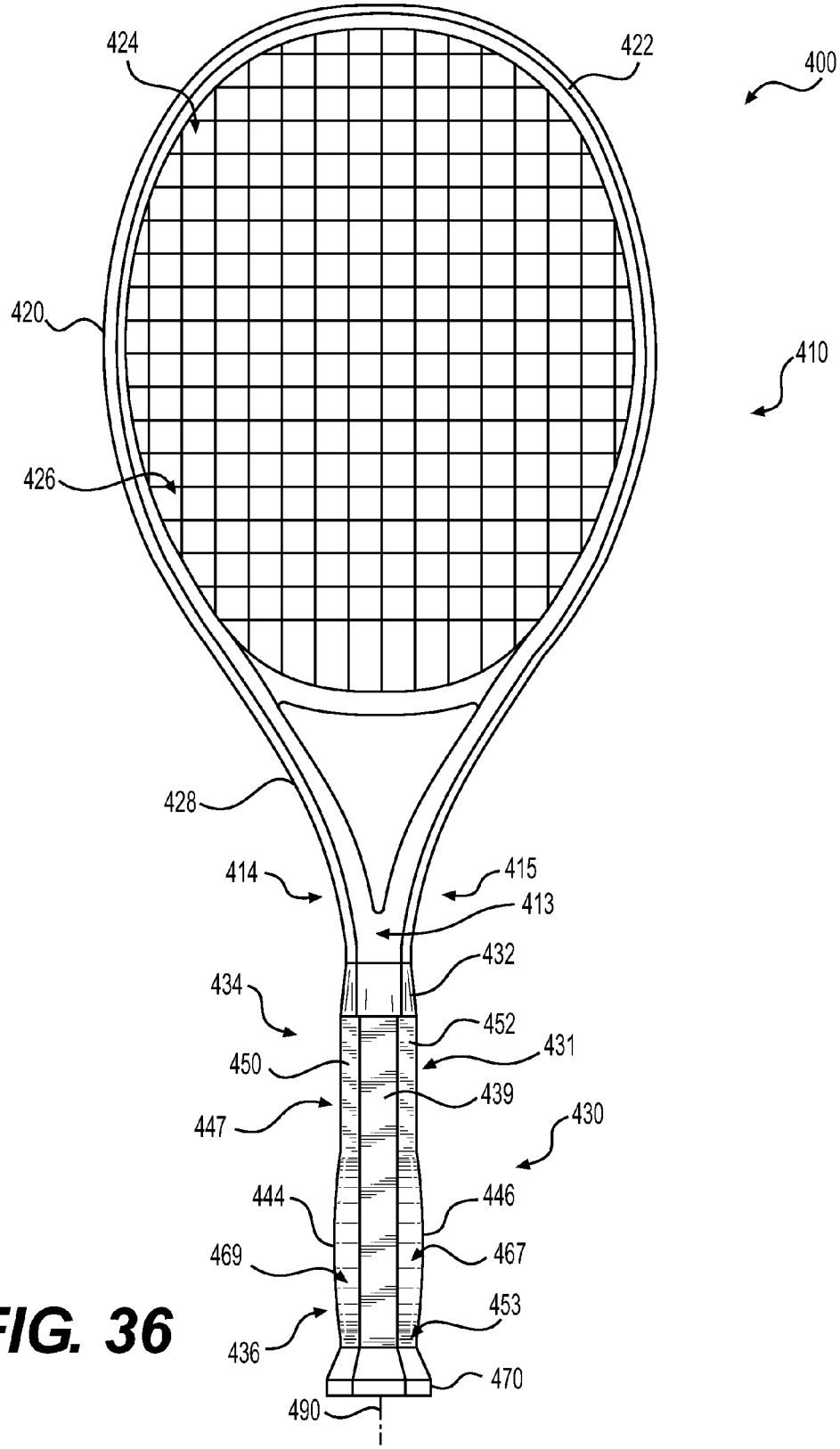
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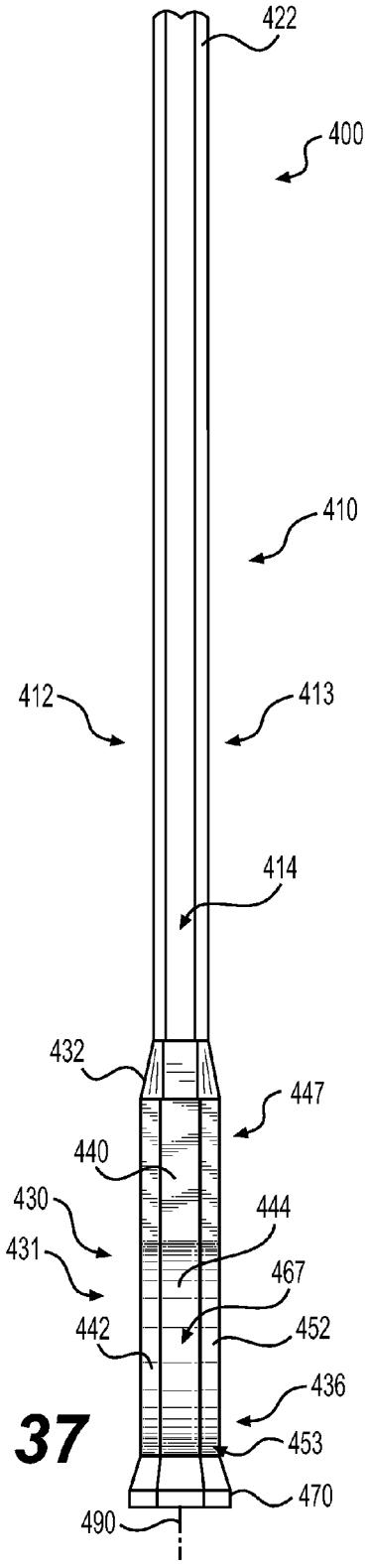
FIG. 36


422
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467
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436
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470
490

FIG. 37

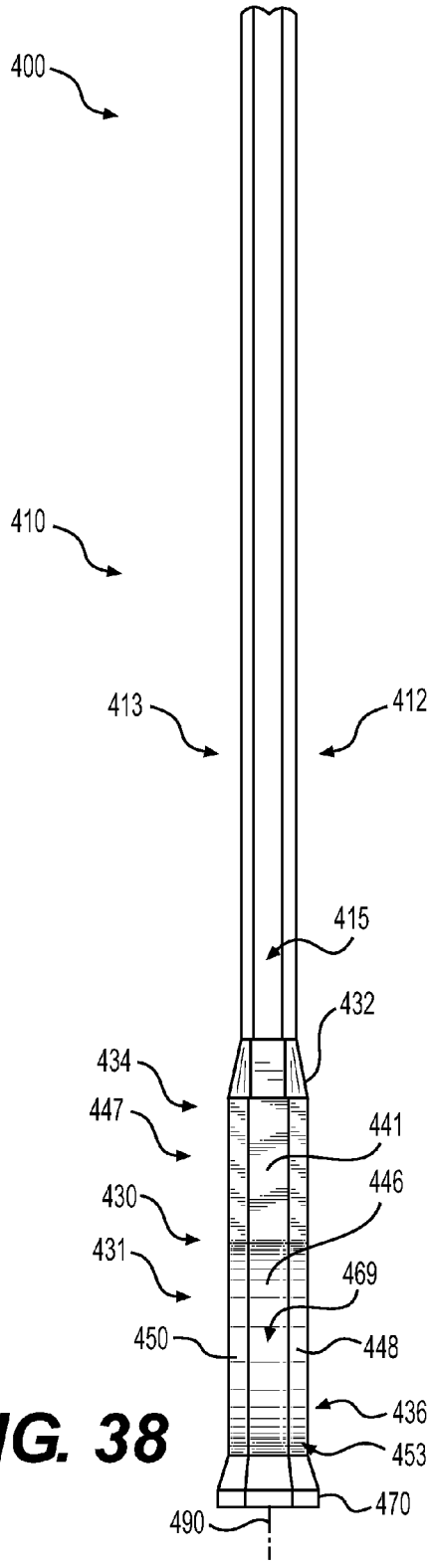
400
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FIG. 38

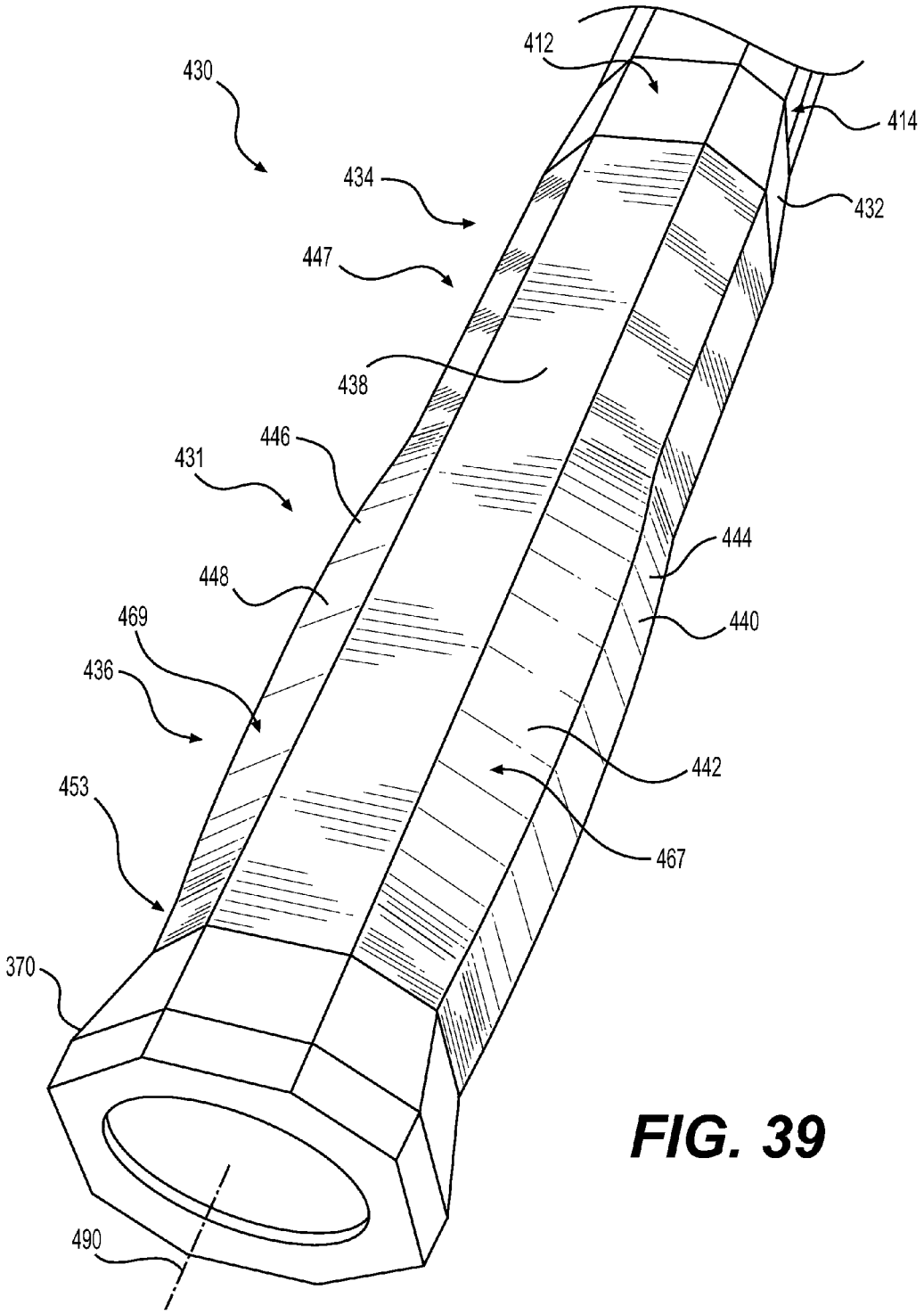
412
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FIG. 39

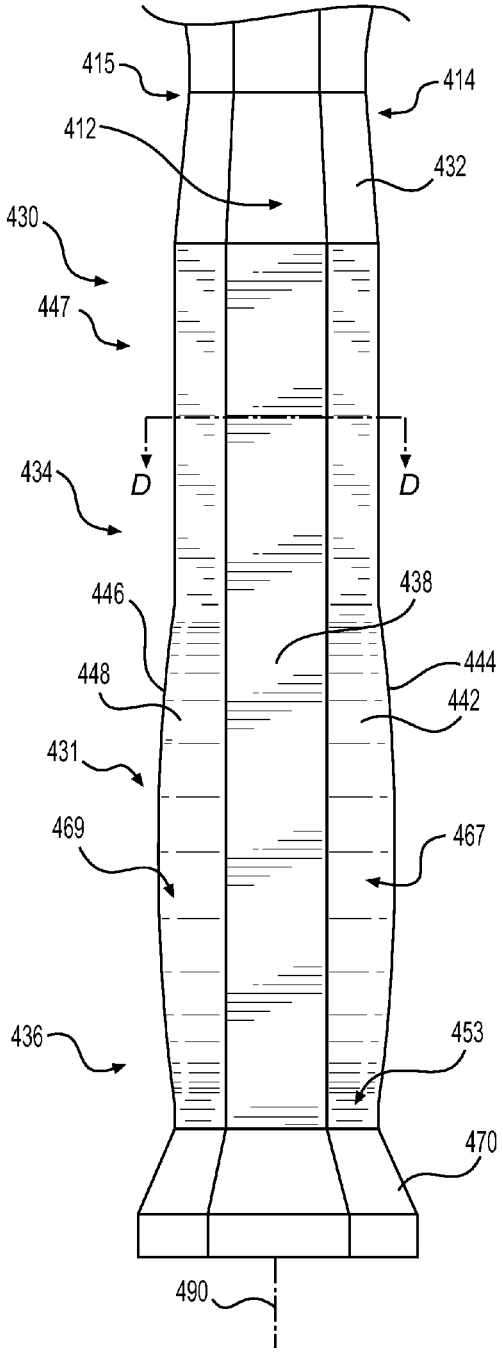
415
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FIG. 40

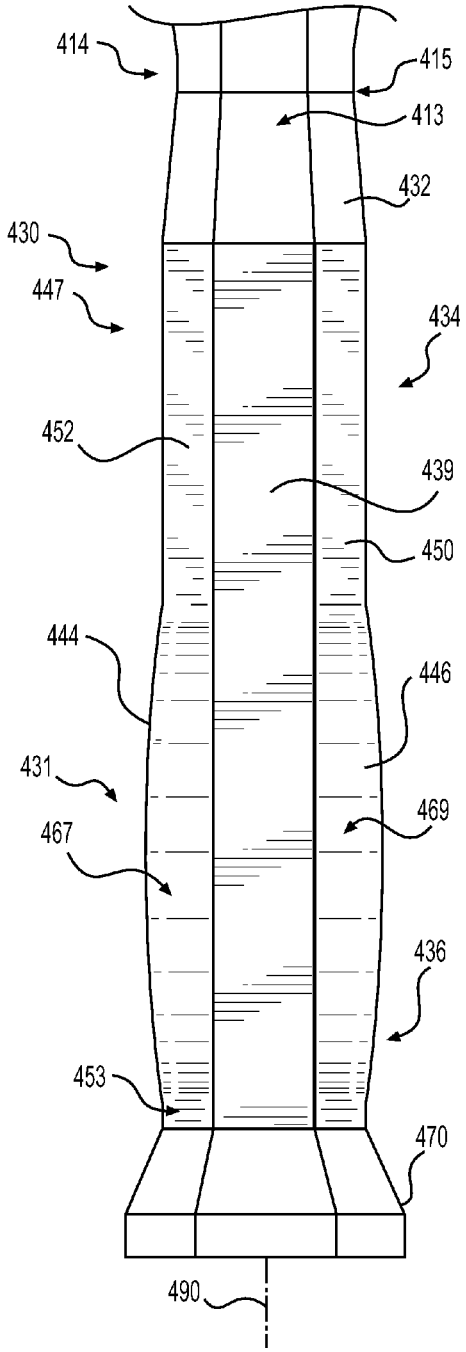
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FIG. 41

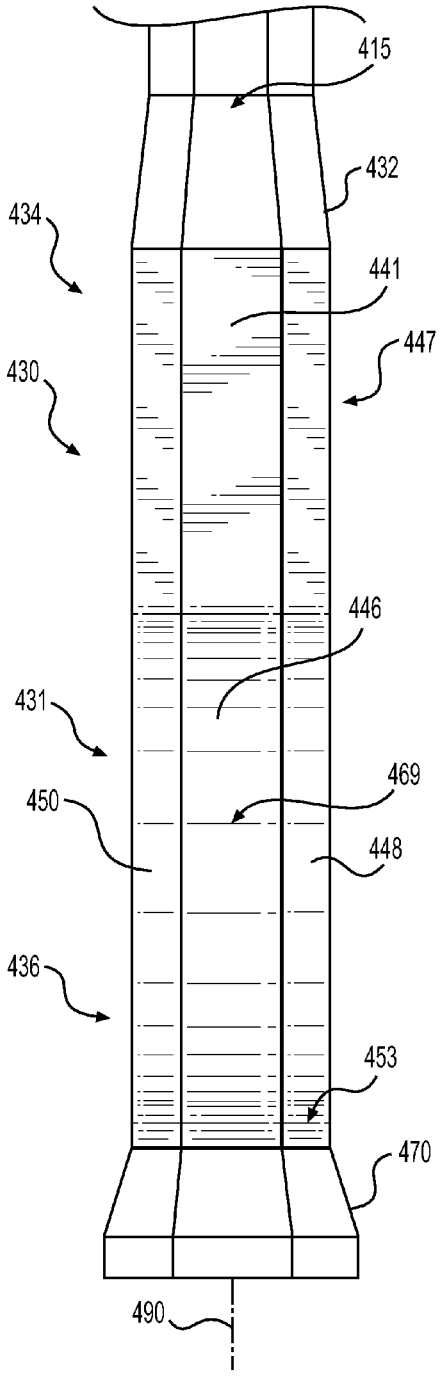
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FIG. 42

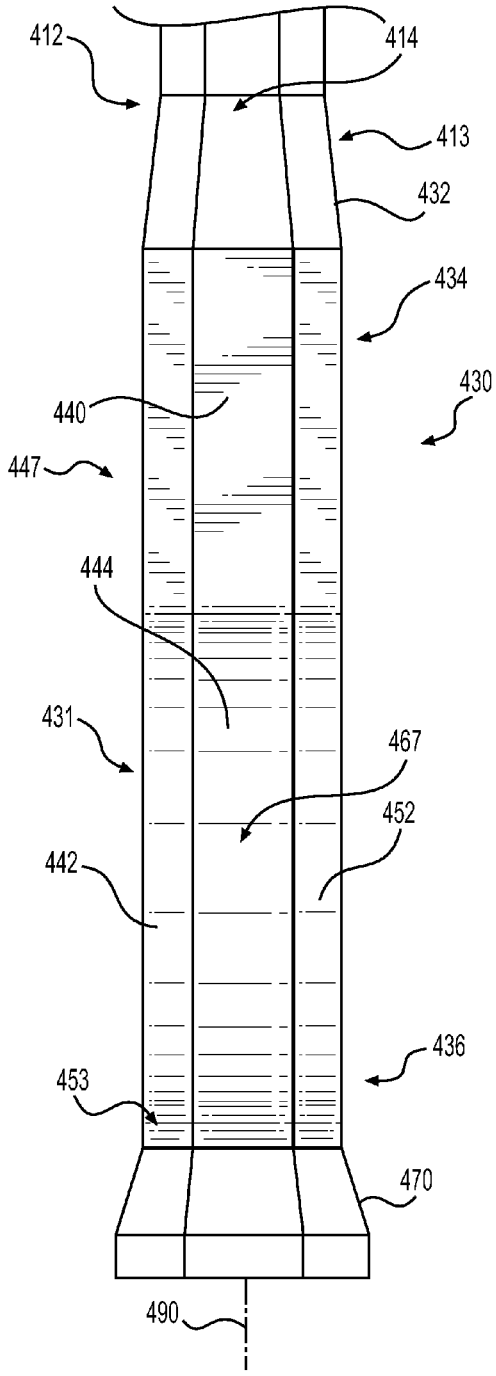
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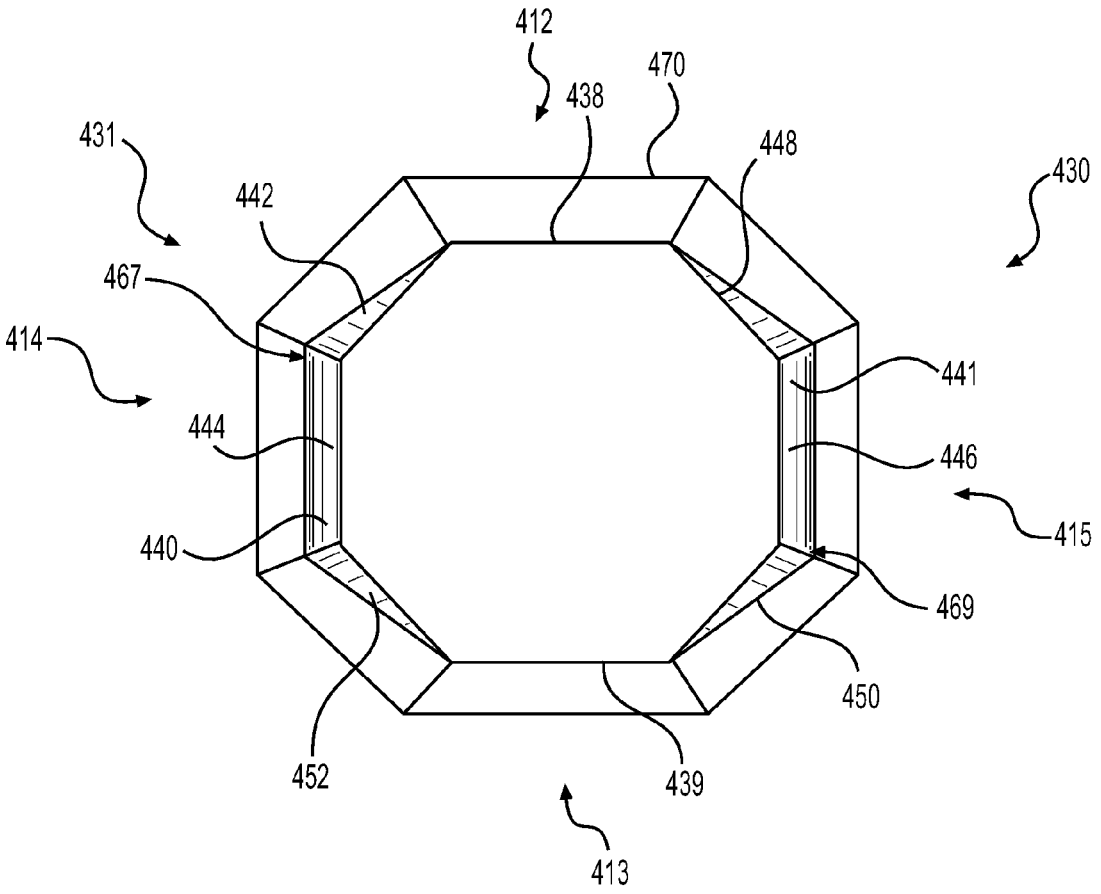
FIG. 43


412
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413

FIG. 44

SPORTS RACKETS AND RACKET HANDLES

TECHNICAL FIELD

The present disclosure is directed generally to sports rackets, and, more particularly, to sports racket handles.

BACKGROUND

Sports rackets, such as tennis, squash, badminton and racket ball rackets, generally include elongated handles having constant longitudinal widths. The racket handles comprising constant longitudinal widths lack the contours that can provide a more comfortable, controlled grip to the user, thereby increasing the chance of fatigue during extended use and reducing the user's ability to optimize the power and control that is imparted from the user's hand through the handle and the racket head to the game ball or shuttlecock. Consequently, there is a need for sports rackets with handles that provide varying longitudinal widths that address one or more of the deficiencies that arise in conventional racket handles.

SUMMARY

The present disclosure encompasses a sports racket comprising a frame that has a first face side, a second face side, a first edge side, and a second edge side, wherein the frame further comprises a head with a hoop formed therein and a handle connected to the head. The handle comprises an elongated handle body comprising a plurality of bevels formed thereon, with the elongated handle body comprising a width, a length, a top half portion disposed proximal to the head and a bottom half portion disposed distal to the head. The elongated handle body further comprises a first flared shoulder disposed on the first edge side and a second flared shoulder disposed on the second edge side, wherein both the first flared shoulder and the second flared shoulder extend along at least 25% of the length of the elongated handle body, and wherein at least a portion of the bottom half portion of the elongated handle body is wider than at least a portion of the top half portion of the elongated handle body. In another aspect, the sports racket of the present disclosure can comprise a first flared shoulder and a second flared shoulder both of which extend along at least 35% of the length of the elongated handle body. Additionally, both the first flared shoulder and the second flared shoulder can extend along at least 50% of the length the elongated handle body. In another aspect, both the first flared shoulder and the second flared shoulder extend along at least 80% of the length of the elongated handle body. In yet another aspect, the elongated handle body can further comprise a first lobe disposed along the first edge side and a second lobe disposed along the second edge side. In yet another aspect, the elongated handle body further can comprise a waist. In one aspect, the handle further can comprise a base cap attached to the elongated handle body, wherein the waist is disposed adjacent the base cap. The elongated handle body of the sports racket of the present disclosure also can comprise a neck disposed along the top half portion of the handle body. In one aspect, the neck can be disposed between the head and the first and the second side shoulders. In another aspect of the present disclosure, the plurality of bevels of the elongated handle body can consist of six bevels. In yet another aspect of the present disclosure, the plurality of bevels can consist of eight bevels. In still a further aspect, two bevels of the plurality of bevels can extend along less than 75% of the length of the elongated handle body. In yet another aspect, at least two of the plurality of bevels can be parallel to each other. In a further aspect, at least one of the plurality of bevels can be chiral and an enantiomorph of at least two of the plurality of bevels. In still another aspect, at least one of the plurality of bevels can be congruent with at least one other of the plurality of bevels.

The present disclosure also encompasses a sports racket comprising a frame comprising a first face side, a second face side, a first edge side, and a second edge side, wherein the frame comprises a head and a handle connected to the head, wherein the head comprises a hoop with an aperture formed therein, and wherein the handle comprises a top half portion proximal to the head and a bottom half portion distal from the head, wherein the handle further comprises a first face bevel disposed on the first face side of the frame, a second face bevel disposed on the second face side of the frame, a first intermediate bevel adjoining the first face bevel and extending toward the first edge side of the frame, a second intermediate bevel adjoining the first face bevel and extending toward the second edge side of the frame, a third intermediate bevel adjoining the second face bevel and extending toward the second edge side of the frame, and a fourth intermediate bevel adjoining the second face bevel and extending toward the first edge side of the frame, wherein the first intermediate bevel extends along both the top half portion and the bottom half portion of the handle and wherein a first portion of the first intermediate bevel disposed along the bottom half portion of the handle is wider than a second portion of the first intermediate bevel disposed along the top half portion of the handle, and wherein the second intermediate bevel extends along both the top half portion of the handle and the bottom half portion of the handle and wherein a first portion of the second intermediate bevel disposed along the bottom half portion of the handle is wider than a second portion of the second intermediate bevel disposed along the top half portion of the handle. In another aspect, the handle further can comprise a first edge bevel disposed along the first edge side of the frame and aligned between the first intermediate bevel and the fourth intermediate bevel. In an additional aspect, the handle further can comprise a second edge bevel disposed along the second edge side of the frame and aligned between the second intermediate bevel and the third intermediate bevel. In still another aspect, a portion of the first edge bevel can be aligned parallel to a portion of the second edge bevel. In yet another aspect, a portion of the first edge bevel can be aligned nonparallel to the second edge bevel. In another aspect, the first face bevel can be aligned parallel to the second face bevel. In yet another aspect, the third intermediate bevel can extend along both the top half portion of the handle and the bottom half portion of the handle and wherein a first portion of the third intermediate bevel disposed along the bottom half portion can be wider than a second portion of the third intermediate bevel disposed along the top half portion of the handle, and wherein the fourth intermediate bevel can extend along both the top half portion of the handle and the bottom half portion of the handle, and wherein a first portion of the fourth intermediate bevel disposed along the bottom half portion is wider than a second portion of the fourth intermediate bevel disposed along the top half portion of the handle. In another aspect, a portion of the first intermediate bevel can be adjacent a portion of the fourth intermediate bevel. In yet another aspect, a portion of the second intermediate bevel can be adjacent a portion of the third intermediate bevel. In a further aspect, the handle can comprise a first edge bevel disposed along the first edge side of the frame and aligned between the first intermediate bevel and the fourth intermediate bevel. In yet another aspect, the handle further can comprise a second edge bevel

disposed along the second edge side of the frame and aligned between the second intermediate bevel and the third intermediate bevel. In still a further aspect, the first edge bevel can be aligned parallel to the second edge bevel. In yet another aspect, the handle further can comprise a first lobe disposed along the first edge side and a second lobe disposed along the second edge side. In another aspect, the handle can comprise a waist. In a further aspect, the first intermediate bevel can be chiral and an enantiomorph of the second intermediate bevel. In yet another aspect, the first intermediate bevel can be chiral and an enantiomorph of the fourth intermediate bevel. In yet another aspect, the first intermediate bevel can be congruent with the third intermediate bevel. In another aspect, the first intermediate bevel can be chiral and an enantiomorph of the second and the fourth intermediate bevels, and wherein the first intermediate bevel can be congruent with the third intermediate bevel. In another aspect, the second intermediate bevel can be congruent with the fourth intermediate bevel. In a further aspect, the handle can comprises a neck disposed along the top half portion of the handle.

The present disclosure also encompasses handles that are attachable to sports rackets wherein the handles comprise one or more of the features of the handles set forth herein above.

These and other aspects of the present disclosure are set forth in greater detail below and in the drawings for which a brief description is provided as follows.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a sports racket encompassing aspects of the present disclosure.

FIG. **2** is an elevation view of a first face side of the sports racket shown in FIG. **1**.

FIG. **3** is an elevation view of a second face side of the sports racket shown in FIG. **1**.

FIG. **4** is an elevation view of a first edge side of the sports racket shown in FIG. **1**.

FIG. **5** is an elevation view of a second edge side of the sports racket shown in FIG. **1**.

FIG. **6** is an enlarged perspective view of the handle and a portion of the throat of the sports racket shown in FIG. **1**.

FIG. **7** is an enlarged elevation view of the first face side of the handle and a portion of the throat of the sports racket shown in FIG. **1**.

FIG. **8** is an enlarged elevation view of the second face side of the handle and a portion of the throat of the sports racket shown in FIG. **1**.

FIG. **9** is an enlarged elevation view of the first edge side of the handle and a portion of the throat of the sports racket shown in FIG. **1**.

FIG. **10** is an enlarged elevation view of the second edge side of the handle and a portion of the throat of the sports racket shown in FIG. **1**.

FIG. **11** is an enlarged cross-sectional view of the handle of the sports racket shown in FIG. **1** taken along line A-A of FIG. **8**.

FIG. **12** is a perspective view of another sports racket encompassing aspects of the present disclosure.

FIG. **13** is an elevation view of a first face side of the sports racket shown in FIG. **12**.

FIG. **14** is an elevation view of a second face side of the sports racket shown in FIG. **12**.

FIG. **15** is an elevation view of a first edge side of the sports racket shown in FIG. **12**.

FIG. **16** is an elevation view of a second edge side of the sports racket shown in FIG. **12**.

FIG. **17** is an enlarged perspective view of the handle and a portion of the throat of the sports racket shown in FIG. **12**.

FIG. **18** is an enlarged elevation view of the first face side of the handle and a portion of the throat of the sports racket shown in FIG. **12**.

FIG. **19** is an enlarged elevation view of the second face side of the handle and a portion of the throat of the sports racket shown in FIG. **12**.

FIG. **20** is an enlarged elevation view of the first edge side of the handle and a portion of the throat of the sports racket shown in FIG. **12**.

FIG. **21** is an enlarged elevation view of the second edge side of the handle and a portion of the throat of the sports racket shown in FIG. **12**.

FIG. **22** is an enlarged cross-sectional view of the handle of the sports racket shown in FIG. **12** taken along line B-B of FIG. **18**.

FIG. **23** is a perspective view of yet another sports racket encompassing aspects of the present disclosure.

FIG. **24** is an elevation view of a first face side of the sports racket shown in FIG. **23**.

FIG. **25** is an elevation view of a second face side of the sports racket shown in FIG. **23**.

FIG. **26** is an elevation view of a first edge side of the sports racket shown in FIG. **23**.

FIG. **27** is an elevation view of a second edge side of the sports racket shown in FIG. **23**.

FIG. **28** is an enlarged perspective view of the handle and a portion of the throat of the sports racket shown in FIG. **23**.

FIG. **29** is an enlarged elevation view of the first face side of the handle and a portion of the throat of the sports racket shown in FIG. **23**.

FIG. **30** is an enlarged elevation view of the second face side of the handle and a portion of the throat of the sports racket shown in FIG. **23**.

FIG. **31** is an enlarged elevation view of the first edge side of the handle and a portion of the throat of the sports racket shown in FIG. **23**.

FIG. **32** is an enlarged elevation view of the second edge side of the handle and a portion of the throat of the sports racket shown in FIG. **23**.

FIG. **33** is an enlarged cross-sectional view of the handle of the sports racket shown in FIG. **23** taken along line C-C of FIG. **29**.

FIG. **34** is a perspective view of a still another sports racket encompassing aspects of the present disclosure.

FIG. **35** is an elevation view of a first face side of the sports racket shown in FIG. **34**.

FIG. **36** is an elevation view of a second face side of the sports racket shown in FIG. **34**.

FIG. **37** is an elevation view of a first edge side of the sports racket shown in FIG. **34**.

FIG. **38** is an elevation view of a second edge side of the sports racket shown in FIG. **34**.

FIG. **39** is an enlarged perspective view of the handle and a portion of the throat of the sports racket shown in FIG. **34**.

FIG. **40** is an enlarged elevation view of the first face side of the handle and a portion of the throat of the sports racket shown in FIG. **34**.

FIG. **41** is an enlarged elevation view of the second face side of the handle and a portion of the throat of the sports racket shown in FIG. **34**.

FIG. **42** is an enlarged elevation view of the first edge side of the handle and a portion of the throat of the sports racket shown in FIG. **34**.

FIG. **43** is an enlarged elevation view of the second edge side of the handle and a portion of the throat of the sports racket shown in FIG. **34**.

FIG. **44** is an enlarged cross-sectional view of the handle of the sports racket shown in FIG. **1** taken along line D-D of FIG. **40**.

DETAILED DESCRIPTION

The present disclosure is directed to sports rackets and handles for sports rackets. The handles of the sports rackets of the present disclosure comprise handle bodies that vary in width along a longitudinal axis extending through the body. The variations in width provide surface features by which the handles can be gripped with enhanced effect. The sports racket handles include flared portions on the edge sides thereof that provide increased surface area for a racket user to grip the racket.

As used herein, the term "bevel" refers to a surface that forms an edge with an adjacent surface and wherein the angle formed by these two adjacent surfaces does not equal 90°.

As used herein, the term "adjacent" refers to the relationship of two components in a contiguous arrangement.

As used herein, the term "hoop" refers to ring-like structure that can be either circular, or rounded but non-circular, and that defines an aperture formed therein.

As used herein, the term "face side" refers to one of the two major sides of the frame of the racket of the present disclosure, wherein the major sides are wider than the minor sides of the frame.

As used herein, the term "edge side" refers to one of the two minor sides of the racket of the present disclosure.

As used herein, the term "connected" refers to either the joining of two components in touching engagement with each other or the engagement of two components with each other via an intermediate component.

As used herein, the term "chiral" refers to an object that cannot be superimposed on its mirror image by rotations or translations alone.

As used herein, the term "enantiomorph" refers to a chiral object and its mirror image.

As used herein, the term "congruent" refers to two objects that, when superimposed, coincide at all points.

As used herein, the term "oblique" refers to a spatial relationship that is neither perpendicular nor parallel to a given line or surface.

FIGS. **1-11** show a sports racket **100** and parts thereof that encompass aspects of the present disclosure. The sports racket **100** includes a frame **110** that has a first face side **112**, a second face **113**, a first edge side **114**, and a second edge side **115**. The widest portions of the first and second face sides **112** and **113** are wider than the widest portions of the first and second edge sides **114** and **115**. The first face side **112** is opposite to the second face side **113**, as is the first edge side **114** opposite to the second edge side **115**. The frame **110** also includes a head **120**, a throat **128** and a handle **130**. The head **120** is aligned at the top of the frame **110** and is connected to the handle **130** by the throat **128**. The head **120** includes a hoop **122** that defines an aperture **124** that is open to both the first face side **112** and the second face side **113** of the frame **110**. Across the aperture **124** are strung one or more strings **126** that connect to opposing points along the hoop **122**.

The handle **130** includes a top cap **132** disposed at the top of the handle **130** proximal to the throat **128** and the head **120**, a handle body **131** disposed below the top cap **132** distal to the throat **128** and the head **120**, and a base cap **170** attached to the bottom half portion **136** of the handle body **131**. The racket handles of the present disclosure can include a top cap **132** with various configurations. In some configurations, the top cap **132** can include a plurality of bevels, as shown in FIGS. **1-11**, or, alternatively, can include a frustoconical portion that has no bevels. In some configurations, the top cap **132** is tapered outward from the throat **128** to the handle body **131**. In other words, the width of the top of the top cap **132** is narrower than the base of the top cap **132**, wherein the top of the top cap **132** is proximal to the head **120** of the racket **100** and the base of the top cap **132** is distal from the head **120** and adjacent to the handle body **131**. The top cap **132** is distinguishable from the handle body **131** by one or more edges that extend around the bottom of the top cap **132** and delineate the surfaces of the handle body **131** from those of the top cap **132**. The present disclosure also encompasses rackets that have handles that do not include top caps. The lengths of handle bodies of the racket handles of the present disclosure are longer than the lengths of the top caps and base caps combined, as measured from the top of the handle proximal to the head of the racket, to the bottom of the handle distal to the head of the racket. In one aspect, the lengths of the handle bodies of the racket handles of the sports rackets of the present disclosure are more than 60% of the total length of the racket handles. In another aspect, the lengths of the handle bodies of the racket handles of the sports rackets of the present disclosure are more than 70% of the total length of the racket handles.

The handle body **131** of handle **130** includes a top half portion **134** that is proximal to the head **120** and a bottom half portion **136** that is distal to the head **120**. The top half portion **134** is proximal to the head **120** and disposed adjacent to the top cap **132** and the bottom half portion **136** is distal from the head **120** and disposed adjacent to the base cap **170**. Both the top half portion **134** and the bottom half portion **136** extend one half of the distance between the bottom of the top cap **132** and the top of the base cap **170**, or, in the case where there is either no top cap, no bottom cap, or both, then the distance from the top of the handle **130** proximal to the head **120** and the bottom of the handle **130** distal from the head **120**. The handle body **131** comprises a plurality of bevels that forms the outer surface thereof. As shown in FIGS. **1-11**, the plurality of bevels includes eight bevels that circumscribe and extend along the entire length of the handle body **131**. The first face bevel **138** is formed on the handle body **131** and is aligned on the first face side **112** of the frame **110**. The first face bevel **138** extends from the bottom of the top cap **132** to the top of the base cap **170**. The first face bevel **138** is delineated by edges extending around the perimeter thereof. The first face bevel **138** is a rectangle with a width extending across a portion of the first face side **112** of the frame **110** and a length extending between the top cap **132** and the base cap **170**. The sports rackets encompassed by the present disclosure also can include racket handles that have one or more bevels that are non-planar or that have non-planar or three-dimensional features.

The first edge bevel **140** is formed on the handle body **131** and is disposed along the first edge side **114** of the frame **110**. The first edge bevel **140** extends the entire length of the handle body **131** from the bottom of the top cap **132** to the top of the base cap **170** and extends through both the top half portion **134** and the bottom half portion **136** of the handle body **131**. The first edge bevel **140** is delineated by edges extending around the perimeter thereof. The first edge bevel **140** is separated from the first face bevel **138** by a first intermediate bevel **142**.

The first intermediate bevel **142** extends the entire length of the handle body **131** from the bottom of the top cap **132** to the

top of the base cap **170** through both the top half portion **134** and the bottom half portion **136** of the handle body **131** and is contiguous with both the first face bevel **138** and the first edge bevel **140**. The edge of the first intermediate bevel **142** adjoining the first face bevel **138** is oblique to the edge of the first intermediate bevel **142** adjoining the first edge bevel **140**. The width of the base of the first intermediate bevel **142** disposed in the bottom half portion **136** of the handle **130** is wider than the top of the first intermediate bevel **142** disposed in the top half portion **134** of the handle body **131**. Furthermore, the first intermediate bevel **142** is wider at every point within the bottom half portion **136** than at any point within the top half portion **134** of the handle body **131**. The first intermediate bevel **142** is trapezoidal and chiral.

The second intermediate bevel **148** is disposed between and contiguous with the first face bevel **138** and the second edge bevel **141**. The second intermediate bevel **148** is an enantiomorph of the first intermediate bevel **142**. The second intermediate bevel **148** is delineated by edges extending around the periphery thereof. A first edge of the second intermediate bevel **148** adjoins the first face bevel **138** and an opposed edge of the second intermediate bevel **148** adjoins the second edge bevel **141**. The edge of the second intermediate bevel **148** that adjoins the second edge bevel **141** is oblique to the edge of the second intermediate bevel **148** that adjoins the first face bevel **138**. The second intermediate bevel **142** also is trapezoidal and chiral.

The second edge bevel **141** is disposed between and contiguous with the second intermediate bevel **148** and the third intermediate bevel **150**. The second edge bevel **141** is disposed on the second edge side **115** of the frame **110**. The second edge side **141** extends from the bottom of the top cap **132** through the top half portion **134** to the bottom half portion **136** of the handle body **131** and terminates at the top of the base cap **170**. The second edge bevel **141** is a rectangular and planar.

As shown in FIG. **3**, the handle body **131** includes a second face bevel **139** that is aligned on the second face side **113** of the frame **110**. Like the first face bevel **138**, the second face bevel **139** is rectangular and disposed between the bottom of the top cap **132** and the top of the base cap **170** and extends from the top half portion **134** through the bottom half portion **136** of the handle body **131**. The first face bevel **138** and the second face bevel **139** are both planar and aligned parallel to each other. The sports rackets of the present disclosure also encompass non-planar face bevels that are aligned on opposing sides of the handle. The second face bevel **139** is delineated by edges extending around the perimeter thereof. The second face bevel **139** adjoins the top cap **132**, the base cap **170**, the third intermediate bevel **150**, and the fourth intermediate bevel **152**. The first edge of the second face bevel **139** that adjoins the third intermediate bevel **150** is parallel to the second edge of the second face bevel that adjoins the fourth intermediate bevel **152**.

The third intermediate bevel **150** is disposed between and contiguous with the second face bevel **139** and the second edge bevel **141**. The third intermediate bevel **150** is chiral and an enantiomorph of both the second intermediate bevel **148** and the fourth intermediate bevel **152** and congruent with the first intermediate bevel **142**. The width of the top of the third intermediate bevel **150** disposed in the top half portion **134** of the handle body **131** is narrower than the width of the base of the third intermediate bevel **150** disposed in the bottom half portion **136** of the handle body **131**. The edge of the third intermediate bevel **150** adjoining the second edge bevel **141** is oblique to the edge of the third intermediate bevel **150** adjoining the second face bevel **139**. The third intermediate bevel **150** is trapezoidal.

The fourth intermediate bevel **152** is disposed between and contiguous with the second face bevel **139** and the first edge bevel **140**. The fourth intermediate bevel **152** is extends from the bottom edge of the top cap **132** to the top edge of the base cap **170** and extends from the top half portion **134** to the bottom half portion **136** of the handle body **131**. One edge of the fourth intermediate bevel **152** adjoins the second face bevel **139** and another edge of the fourth intermediate bevel **152** adjoins the first edge bevel. The edge of the fourth intermediate bevel **152** adjoining the first edge bevel **140** is oblique to the edge of the fourth intermediate bevel **152** adjoining the second face bevel **139**. The width of the fourth intermediate bevel **152** is narrower in the top half portion **134** than the width of the portion of the fourth intermediate bevel **152** in the bottom half portion **136** of the handle body **131**. The fourth intermediate bevel **152** is chiral and an enantiomorph of the third intermediate bevel **150** and the first intermediate bevel **142** and is congruent with the second intermediate bevel **148**. The fourth intermediate bevel **152** is trapezoidal.

As shown in FIGS. **1-11**, the first, second, third, and fourth intermediate bevels **142**, **148**, **150**, and **152**, respectively, are planar. In an alternative aspect, any one or more of the first, second, third, and fourth intermediate bevels **142**, **148**, **150**, and **152**, respectively, can comprise both a rounded portion or, alternatively, the combination of a curved portion and a planar portion. In one embodiment, the curved portion of one or more of the first, second, third, and fourth intermediate bevels **142**, **148**, **150**, and **152**, respectively, can be disposed in the top half portion **134** of the handle body **131**. In an alternative embodiment, the planar portion of one or more of the first, second, third, and fourth intermediate bevels **142**, **148**, **150**, and **152**, respectively, can be disposed in the bottom half portion **136** of the handle body **131**.

The handle body **131** includes a first shoulder **144** and a second shoulder **146**. As shown in FIGS. **2**, **3**, **7**, **8**, and **11**, both the first shoulder **144** and the second shoulder **146** extend from the top cap **132** to the bottom cap **170**. The first shoulder **144** and the second shoulder **146** are disposed on opposing sides of the handle body **131** and are aligned on the first and second edge sides **114** and **115**, respectively. Each of the first and the second shoulders **144** and **146** flare outward from the top half portion **134** to the bottom half portion **136** of the handle body **131**. The alignment of the first shoulder **144** and the second shoulder **146** on the racket **100** allows a user to sense by touch the alignment of the racket **100** within the users hand since the width of the handle **130** is wider along the shoulders **144** and **146** than on the face sides of the handle. As shown in FIGS. **2**,**3**, **7** and **8**, the first shoulder **144** and the second shoulder **146** extend 100% of the length of the handle body **131**.

The base cap **170** is connected to the bottom half portion **136** of the handle body **131** and can be flared wider than the bottom half portion **136** of the handle body **131**, as shown in FIGS. **1-11**. The base cap **170** is attached to the end of the handle body **131** and can be a conventional octagonal cap with flared sides and a base that is wider than the top thereof. Alternatively, the base cap can be of a different configuration. The sports rackets encompassed by the present disclosure also can include handles that do not include separate base caps, but rather have handle bodies that extend to and terminate at the end of the handle distal to the head of the racket.

As shown in FIGS. **1-11**, the first face bevel **138** and the second face bevel **139** are flat or planar, though in alternative

embodiments, either or both of the first face bevel **138** and the second face bevel **139** can include rounded contours, dimples, or non-planar contours.

As shown in FIGS. **1-10**, the first face bevel **138** and the second face bevel **139** are aligned parallel to the axis **190** extending longitudinally through the handle **130**. First shoulder **144** and second shoulder **146** are both oblique to the axis **190**, as are the first, second, third and fourth intermediate bevels **142**, **148**, **150**, and **152** and the first edge bevel **140** and the second edge bevel **141**.

FIGS. **12-22** show another sports racket **200** and parts thereof that encompasses aspects of the present disclosure. The sports racket **200** includes a frame **210** that has a first face side **212**, a second face **213**, a first edge side **214**, and a second edge side **215**. The widest portions of the first and second face sides **212** and **213** are wider than the widest portions of the first and second edge sides **214** and **215**. The first face side **212** is opposite to the second face side **213**, as is the first edge side **214** opposite to the second edge side **215**. The frame **210** also includes a head **220**, a throat **228** and a handle **230**. The head **220** is aligned at the top of the frame **210** and is connected to the handle **230** by the throat **228**. The head **220** includes a hoop **222** that defines an aperture **224** that is open to both the first face side **212** and the second face side **213** of the frame **210**. Across the aperture **224** are strung one or more strings **226** that connect to opposing points along the hoop **222**.

The handle **230** includes a top cap **232** disposed at the top of the handle **230** proximal to the throat **228** and the head **220**, a handle body **231** disposed below the top cap **232** distal to the throat **228** and the head **220**, and a base cap **270** attached to the bottom half portion **236** of the handle body **231**.

The handle body **231** of handle **130** includes a top half portion **234** that is proximal to the head **220** and a bottom half portion **236** that is distal to the head **220**. The top half portion **234** is disposed adjacent the top cap **232** and the bottom half portion **236** is attached to the base cap **270**. Both the top half portion **234** and the bottom half portion **236** extend one half of the distance between the bottom of the top cap **232** and the top of the base cap **270**, or, alternatively, one half the distance of the total length of the handle body **231**. The handle body **231** comprises a plurality of bevels that form the outer surface thereof. The handle body **231** includes six bevels that extend the entire length of the handle body **2231** from the top cap **232** to the base cap **270**. The first face bevel **238** is formed on the handle body **231** and is aligned on the first face side **212** of the frame **210**. The first face bevel **238** extends from the bottom of the top cap **232** to the top of the base cap **270**. The first face bevel **238** is delineated by edges extending around the perimeter thereof, and is a rectangle with a width extending across a portion of the first face side **212** of the frame **210** and a length extending between the top cap **232** and the base cap **270**.

The first intermediate bevel **242** extends the entire length of the handle body **231** from the bottom of the top cap **232** to the top of the base cap **270** through both the top half portion **234** and the bottom half portion **236** of the handle body **231**. The first intermediate bevel **242** adjoins and is contiguous with both the first face bevel **238** and the fourth intermediate bevel **252**. The edge of the first intermediate bevel **242** adjoining the first face bevel **238** is oblique to the edge of the first intermediate bevel **242** adjoining the fourth intermediate bevel **252**. The edge adjoining the first and the fourth intermediate bevels **242** and **252** is aligned on the first edge side **214** of the frame **210**. The width of the widest portion of the first intermediate bevel **242** disposed in the bottom half portion **236** of the handle body **231** is wider than width of the widest portion of the first intermediate bevel **242** disposed in the top half portion **234** of the handle body **231**. The first intermediate bevel **242** is hexagonal and chiral.

The second intermediate bevel **248** is disposed between and contiguous with the first face bevel **238** and the third intermediate bevel **250**. The second intermediate bevel **248** is chiral and an enantiomorph of the first intermediate bevel **242** and the third intermediate bevel **250**. The second intermediate bevel **248** is delineated by edges extending around the periphery thereof, and extends the entire length of the handle body **231** from the bottom half portion of the top cap **232** through the top half portion **234** to the bottom half portion **236** of the handle body **231** and terminates at the top of the base cap **270**. The first edge of the second intermediate bevel **248** adjoins the first face bevel **238** and an opposed edge of the second intermediate bevel **248** adjoins the third intermediate bevel **250**. The edge of the second intermediate bevel **248** adjoining the third intermediate bevel **250** is aligned on the second edge side **215** of the frame **210** and is oblique to the edge of the second intermediate bevel **248** adjoining the first face bevel **238**. The second intermediate bevel **248** also is hexagonal.

The third intermediate bevel **250** is disposed between and contiguous with the second intermediate bevel **248** and the second face bevel **239**. The third intermediate bevel **250** is chiral and an enantiomorph of the second intermediate bevel **248** and the fourth intermediate bevel **252** and is congruent with the first intermediate bevel **242**. The third intermediate bevel **250** extends the entire length of the handle body **231** from the bottom half portion of the top cap **232** through the top half portion **234** to the bottom half portion **236** and terminates at the top of the base cap **270**. The third intermediate bevel also is hexagonal.

As shown in FIG. **14**, the handle body **231** includes a second face bevel **239** that is aligned on the second face side **213** of the frame **210** and is disposed between and continuous with the third intermediate bevel **250** and the fourth intermediate bevel **252**. Like the first face bevel **238**, the second face bevel **239** is rectangular and disposed between the bottom of the top cap **232** and the top of the base cap **270** and extends the entire length of the handle body **231** from the top half portion **234** through the bottom half portion **236** of the handle body **231**. The second face bevel **239** is congruent with the first face bevel **238**. As shown in FIGS. **18-22**, the first face bevel **238** and the second face bevel **239** are both planar and aligned parallel to each other and to the axis **290** extending longitudinally through the handle **230**.

The fourth intermediate bevel **252** is disposed between and contiguous with the second face bevel **239** and the first intermediate bevel **242**. The fourth intermediate bevel **252** is chiral and an enantiomorph of the first and third intermediate bevel **242** and **250** and congruent with the second intermediate bevel **248**. The width of the widest portion of the fourth intermediate bevel **252** disposed in the top half portion **234** of the handle body **231** is narrower than the width of the widest portion of the fourth intermediate bevel **252** disposed in the bottom half portion **236** of the handle body **231**. The edge of the fourth intermediate bevel **252** adjoining the second face bevel **239** is oblique to the edge of the fourth intermediate bevel **252** adjoining the first intermediate bevel **242**. The fourth intermediate bevel **252** is hexagonal.

The handle body **231** also comprises a first top edge bevel **243** disposed in the top half portion **234** along the first edge side **214** of the frame **210** between a portion of the first intermediate bevel **242** and a portion of the fourth intermediate bevel **252** and below the top cap **232**. The first top edge bevel is planar and triangular. On the second edge side **215** of the frame **210** is aligned a second top edge bevel **247**, which

is disposed in the top half portion **234** of the handle body **231** between a portion of the second intermediate bevel **248**, the third intermediate bevel **250** and the top cap **232**. The second edge bevel **247** also is triangular and planar and is aligned oblique to the first edge bevel **243**.

The handle body **231** also comprises a first bottom edge bevel **245** disposed in the bottom half portion **236** along the first edge side **214** of the frame **210** between a portion of the first intermediate bevel **242** and a portion of the fourth intermediate bevel **252** and above the base cap **270**. The first bottom edge bevel **245** is triangular and planar. On the second edge side **215** of the frame **210** is aligned a second bottom edge bevel **249**, which is disposed in the bottom half portion **236** of the handle body **231** between a portion of the second intermediate bevel **248**, the third intermediate bevel **250** and the base cap **270**. The first bottom edge bevel **245** is aligned oblique to the second bottom edge bevel **249**. The second bottom edge bevel **249** is also triangular and planar. The first and the second bottom edge bevels **245** and **249** form a waist **253** on the handle body **231** disposed in the bottom half portion **236** adjacent the base cap **270**. The waist **253** has a width that is narrower than the widest portion of the bottom half portion **236** of the handle body **231**. The waist **253** and the flared sides of the base cap **270** form retention slots on the first and second edge sides **214** and **215** in which a racket user can align one or more fingers to provide leverage and grip variations as the racket **200** is used.

The racket body **231** includes a pair of shoulders disposed thereon. The first shoulder **244** is disposed on the first edge side **214** of the handle **230** and the second shoulder **246** is disposed on the second edge side **215** of the handle **230**. The first and second shoulders **244** and **246** extend downward from the head **220** and flare outward. The first shoulder **244** is formed by the first and the fourth intermediate bevels **242** and **252**, whereas the second shoulder **246** is formed by the second and third intermediate bevels **248** and **250**. The flared first and second shoulders **244** and **246** provide a racket user a broader surface to grip in the plane extending across the face sides of the racket **200** and surface indicators for the orientation of the racket **200** within the user's hand. The first shoulder **244** and the second shoulder **246** both extend more than 50% of the length of the handle body **231**.

As shown in FIGS. **12-21**, the first face bevel **238** and the second face bevel **239** are aligned parallel to the axis **290** extending longitudinally through the handle **230**. First shoulder **244** and second shoulder **246** are both oblique to the axis **290**, as are at least a portion of each of the first, second, third and fourth intermediate bevels **242**, **248**, **250**, and **252**.

FIGS. **23-33** show yet another sports racket **300** and parts thereof that encompass aspects of the present disclosure. The sports racket **300** includes a frame **310** that has a first face side **312**, a second face **313**, a first edge side **314**, and a second edge side **315**. The widest portions of the first and second face sides **312** and **313** are wider than the widest portions of the first and second edge sides **314** and **315**. The first face side **312** is opposite to the second face side **313**, as is the first edge side **314** opposite to the second edge side **315**. The frame **310** also includes a head **320**, a throat **328** and a handle **330**. The head **320** is aligned at the top of the frame **310** and is connected to the handle **330** by the throat **328**. The head **320** includes a hoop **322** that defines an aperture **324** that is open to both the first face side **312** and the second face side **313** of the frame **310**. Across the aperture **324** are strung one or more strings **326** that connect to opposing points along the hoop **322**.

The handle **330** includes a top cap **332** disposed at the top of the handle **330** proximal to the throat **328** and the head **320**, a handle body **331** disposed below the top cap **332** distal to the throat **328** and the head **320**, and a base cap **370** attached to the bottom half portion **336** of the handle body **331**.

The handle body **331** of handle **330** includes a top half portion **334** that is proximal to the head **320** and a bottom half portion **336** that is distal to the head **320**. The top half portion **334** is disposed adjacent the top cap **332** and the bottom half portion **336** is attached to the base cap **370**. Both the top half portion **334** and the bottom half portion **336** extend one half of the distance between the bottom of the top cap **332** and the top of the base cap **370**. The handle body **331** comprises a plurality of bevels that form the outer surface thereof. The handle body **331** includes six bevels that extend the entire length of the handle body **331** from the top cap **332** to the base cap **370** and two bevels that extend less than the entire length of the handle body **331** from the top cap **332** to intermediate points along the length of the handle body **331**. The first face bevel **338** is formed on the handle body **331** and is aligned on the first face side **312** of the frame **310**. The first face bevel **338** extends the entire length of the handle body **331** from the bottom of the top cap **332** to the top of the base cap **370**. The first face bevel **338** is delineated by edges extending around the perimeter thereof, and is rectangular with a width extending across a portion of the first face side **312** of the frame **310** and a length extending between the top cap **332** and the base cap **370**.

The first intermediate bevel **342** extends the entire length of the handle body **331** from the bottom of the top cap **332** to the top of the base cap **370** through both the top half portion **334** and the bottom half portion **336** of the handle body **331**. The first intermediate bevel **342** adjoins and is contiguous with the first face bevel **338**. A portion of the first intermediate bevel **342** also adjoins and is contiguous the fourth intermediate bevel **352**. Another portion of the first intermediate bevel **342** adjoins and is contiguous with the first side bevel **340**. The edge of the first intermediate bevel **342** adjoining the first face bevel **338** is oblique to the edge of the first intermediate bevel **342** adjoining the fourth intermediate bevel **352**. The edge of the first intermediate bevel **342** adjoining the first face bevel **338** is parallel to a first portion of the edge of the first intermediate bevel **342** adjoining the first side bevel **340** and is oblique to a second portion of the edge of the first intermediate bevel **342** adjoining the first side bevel **340**. The edge of the first intermediate bevel **342** that adjoins the fourth intermediate bevel **352** is aligned on the first edge side **314** of the frame **310**. The width of the widest portion of the first intermediate bevel **342** disposed in the bottom half portion **336** of the handle body **331** is wider than the width of the widest portion of the first intermediate bevel **342** disposed in the top half portion **334** of the handle body **331**. The first intermediate bevel **342** is six-sided, chiral, but non-polygonal.

The first edge bevel **340** is disposed between the first intermediate bevel **342**, the fourth intermediate bevel **352** and the top cap **332**. The first edge bevel **340** is disposed on the first edge side **314** of the frame **310** and includes a first edge and a second edge, portions of each are parallel to each other and other portions of which taper together and meet to form an angle. The first tapered portion **363** forms the lower termination point of the first edge bevel **340**. The first edge bevel **340** extends from the bottom of the top cap **332** to an intermediate point along the length of the handle body **331**. As shown in FIG. **28**, the first edge bevel **340** is disposed within the top half portion **334** of the handle body **331**.

The second intermediate bevel **348** is disposed between and contiguous with the first face bevel **338** and a portion of the third intermediate bevel **350**. The second intermediate bevel **348** is chiral and an enantiomorph of the first interme-

diate bevel **342** and the third intermediate bevel **350**. The second intermediate bevel **348** is delineated by edges extending around the periphery thereof, and extends the entire length of the handle body **331** from the bottom of the top cap **332** through the top half portion **334** to the bottom half portion **336** of the handle body **331** and terminates at the top of the base cap **370**. A first edge of the second intermediate bevel **348** adjoins the first face bevel **338** and a second edge of the second intermediate bevel **348** adjoins a portion of the third intermediate bevel **350**. A third edge of the second intermediate bevel **348** adjoins the second edge bevel **341**. The second edge of the second intermediate bevel **348** adjoining the third intermediate bevel **350** is aligned on the second edge side **315** of the frame **310** and is oblique to the first edge of the second intermediate bevel **348** adjoining the first face bevel **338**. A first portion of the third edge of the second intermediate bevel **348** adjoining the second edge bevel is parallel to the first edge of the second intermediate bevel **348** adjoining the first face bevel **338**, whereas a second portion of the third edge of the second intermediate bevel **348** adjoining the second edge bevel **341** is oblique to the first edge of the second intermediate bevel **348** adjoining the first face bevel **338**. The second intermediate bevel **342** also is six sided but non-polygonal.

The second edge bevel **341** is disposed between the second intermediate bevel **348**, the third intermediate bevel **350** and the top cap **332**. The second edge bevel **341** is disposed on the second edge side **315** of the frame **310** and includes a first edge and a second edge portions of each of which are parallel to each other and which taper together and meet to form an angle. The second edge bevel **341** extends from the bottom of the top cap **332** to an intermediate point along the length of the handle body **331**. The second taper portion **365** of the second edge bevel **341** is disposed proximal to the base cap **370**. As shown in FIG. **31**, the second edge bevel **341** is disposed within the top half portion **334** of the handle body **331**. The second edge bevel **341** is congruent with the first edge bevel **340**.

The third intermediate bevel **350** is disposed between and contiguous with the second intermediate bevel **348**, the second edge bevel **341**, and the second face bevel **339**. The third intermediate bevel **350** is chiral and an enantiomorph of the second intermediate bevel **348** and the fourth intermediate bevel **350** and is congruent with the first intermediate bevel **342**. The third intermediate bevel **350** extends the entire length of the handle body **331** from the bottom half portion of the top cap **332** through the top half portion **334** to the bottom half portion **336** of the handle body **331** and terminates at the top of the base cap **370**. The second edge bevel **341** is six-sided and non-polygonal.

As shown in FIG. **30**, the handle body **331** includes a second face bevel **339** that is aligned on the second face side **313** of the frame **310** and is disposed between and contiguous with the third intermediate bevel **350** and the fourth intermediate bevel **352**. Like the first face bevel **338**, the second face bevel **339** is rectangular and extends the entire length of the handle body **331** from the bottom of the top cap **332** and the top of the base cap **370** and extends from the top half portion **334** through the bottom half portion **336** of the handle body **331**. The second face bevel **339** is congruent with the first face bevel **338**. As shown in FIGS. **31-33**, the first face bevel **338** and the second face bevel **339** are both planar and aligned parallel to each other.

The fourth intermediate bevel **352** is disposed between and contiguous with the second face bevel **339**, the first intermediate bevel **342** and the first edge bevel **340**. The fourth intermediate bevel **352** is chiral and an enantiomorph of the first and third intermediate bevels **342** and **350** and congruent with the second intermediate bevel **348**. The width of the widest portion of the fourth intermediate bevel **352** disposed in the top half portion **334** of the handle body **331** is narrower than the width of the widest portion of the fourth intermediate bevel **352** disposed in the bottom half portion **336** of the handle body **331**. The edge of the fourth intermediate bevel **352** adjoining the second face bevel **339** is oblique to the edge of the fourth intermediate bevel **352** adjoining the first intermediate bevel **342**. The fourth intermediate bevel **352** is six-sided, non-polygonal, and extends the entire length of the handle body **331**.

The handle body **331** also comprises a first bottom edge bevel **345** disposed in the bottom half portion **336** along the first edge side **314** of the frame **310** between a portion of the first intermediate bevel **342** and a portion of the fourth intermediate bevel **352** and above the base cap **370**. The first bottom edge bevel **345** is triangular and planar. On the second edge side **315** of the frame **310** is aligned a second bottom edge bevel **349**, which is disposed in the bottom half portion **336** of the handle body **331** between a portion of the second intermediate bevel **348**, the third intermediate bevel **350** and the base cap **370**. The first bottom edge bevel **345** is aligned oblique to the second bottom edge bevel **349**. The second bottom edge bevel **349** is also triangular and planar. The first and the second bottom edge bevels **345** and **349** form a waist **353** on the handle body **331** disposed in the bottom half portion **336** adjacent the base cap **370**. The waist **353** has a width that is narrower than the widest portion of the bottom half portion of the handle body **331**. The waist **353** and the flared sides of the base cap **370** form retention slots on the first and second edge sides **314** and **315** in which a racket user can align one or more fingers to provide leverage and grip variations as the racket **300** is used.

The racket body **331** includes a pair of shoulders disposed thereon. The first shoulder **344** is disposed on the first edge side **314** of the handle **330** and the second shoulder **346** is disposed on the second edge side **315** of the handle **330**. The first and second shoulders **344** begin along an intermediate portion of the length of the handle body and flare outward. The first shoulder **344** is formed by the first and the fourth intermediate bevels **342** and **352**, whereas the second shoulder **346** is formed by the second and third intermediate bevels **348** and **350**. The flared first and second shoulders **344** and **346** provide a racket user a broader surface to grip in the plane extending across the face sides of the racket **300** and surface indicators for the orientation of the racket **300** within the users hand.

The racket body **331** also comprises a neck **347** disposed in the top half portion **334** of the handle body **331** between the bottom of the top cap **332** and the first and the second shoulders **344** and **346**. As shown in FIGS. **24**, **25**, **29** and **30**, the width of handle body **331** at the neck **347** is narrower than the width of the handle body **331** between the shoulders **344** and **346**.

As shown in FIGS. **23-32**, the first face bevel **338** and the second face bevel **339** are aligned parallel to the axis **390** extending longitudinally through the handle **330**. The first shoulder **344** and the second shoulder **346** are both oblique to the axis **390**, as are at least a portion of each of the first, second, third and fourth intermediate bevels **342**, **348**, **350**, and **352**.

FIGS. **34-44** show yet another sports racket **400** and parts thereof that encompass aspects of the present disclosure. The sports racket **400** includes a frame **410** that has a first face side **412**, a second face **413**, a first edge side **414**, and a second edge side **415**. The widest portions of the first and second face

sides **412** and **413** are wider than the widest portions of the first and second edge sides **414** and **415**. The first face side **412** is opposite to the second face side **413**, as is the first edge side **414** opposite to the second edge side **415**. The frame **410** also includes a head **420**, a throat **428** and a handle **430**. The head **420** is aligned at the top of the frame **410** and is connected to the handle **430** by the throat **428**. The head **420** includes a hoop **422** that defines an aperture **424** that is open to both the first face side **412** and the second face side **413** of the frame **410**. Across the aperture **424** are strung one or more strings **426** that connect to opposing points along the hoop **422**.

The handle **430** includes a top cap **432** disposed at the top of the handle **430** proximal to the throat **428** and the head **420**, a handle body **431** disposed below the top cap **432** distal to the throat **428** and the head **420**, and a base cap **470** attached to the bottom half portion **436** of the handle body **431**.

The handle body **431** of handle **430** includes a top half portion **434** that is proximal to the head **420** and a bottom half portion **436** that is distal to the head **420**. The top half portion **434** is disposed adjacent the top cap **432** and the bottom half portion **436** is attached to the base cap **470**. Both the top half portion **434** and the bottom half portion **436** extend one half of the length of the handle body **431** between the bottom of the top cap **432** and the top of the base cap **470**. The handle body **431** comprises a plurality of bevels that form the outer surface thereof. The handle body **431** includes eight bevels that extend the entire length of the handle body **431** from the top cap **432** to the base cap **470**.

The first face bevel **438** is formed on the handle body **431** and is aligned on the first face side **412** of the frame **410**. The first face bevel **438** extends the entire length of the handle body **431** from the bottom of the top cap **432** to the top of the base cap **470**. The first face bevel **438** is delineated by edges extending around the perimeter thereof, and is rectangular and planar with a width extending across a portion of the first face side **412** of the frame **410** and a length extending between the top cap **432** and the base cap **470**.

The first intermediate bevel **442** extends the entire length of the handle body **431** from the bottom of the top cap **432** to the top of the base cap **470** through both the top half portion **434** and the bottom half portion **436** of the handle body **431**. The first intermediate bevel **442** adjoins and is contiguous with both the first face bevel **438** and the first side bevel **440**. A first portion of the edge of first intermediate bevel **442** that adjoins the first side bevel **440** is parallel to the edge of the first intermediate bevel **442** that adjoins the first face bevel **438**, but a second portion of the edge of the first intermediate bevel **442** that adjoins the first edge bevel **440** is oblique to the edge of the first intermediate bevel **442** that adjoins the first face bevel **438**. The width of the widest portion of the first intermediate bevel **442** disposed in the bottom half portion **436** of the handle body **431** is wider than the width of the widest portion of the first intermediate bevel **442** disposed in the top half portion **434** of the handle body **431**. The first intermediate bevel **442** is four-sided, chiral and non-polygonal.

The first edge bevel **440** is disposed between the first intermediate bevel **442**, the fourth intermediate bevel **452**, the top cap **432** and the bottom cap **470**. The first edge bevel **440** is disposed on the first edge side **414** of the frame **410** and includes first and second edges portions that are non-planar. The first edge bevel **440** includes a planar portion disposed in the top half portion **434** of the handle body **431** and a non-planar disposed below the planar portion distal to the head **420** of the racket **400**. The first edge bevel **440** extends the entire length of the handle body **431**.

The second intermediate bevel **448** is disposed between and contiguous with the first face bevel **438** and the second edge bevel **441**. The second intermediate bevel **448** is chiral and an enantiomorph of both the first intermediate bevel **442** and the third intermediate bevel **450**, and is congruent with the fourth intermediate bevel **452**. The second intermediate bevel **448** is delineated by edges extending around the periphery thereof, and extends the entire length of the handle body **431** from the bottom half portion of the top cap **432** through the top half portion **434** to the bottom half portion **436** of the handle body **431** and terminates at the top of the base cap **470**. A first portion of the edge of second intermediate bevel **448** that adjoins the second side bevel **441** is parallel to the edge of the second intermediate bevel **448** that adjoins the first face bevel **438**, but a second portion of the edge of the second intermediate bevel **448** that adjoins the second edge bevel **441** is oblique to the edge of the second intermediate bevel **442** that adjoins the first face bevel **438**. The width of the widest portion of the second intermediate bevel **448** disposed in the bottom half portion **436** of the handle body **431** is wider than the width of the widest portion of the second intermediate bevel **448** disposed in the top half portion **434** of the handle body **431**. The second intermediate bevel **448** is four-sided and non-polygonal.

The second edge bevel **441** is disposed between and contiguous with the second intermediate bevel **448**, the third intermediate bevel **450**, the top cap **432** and the base cap **470**. The second edge bevel **441** is disposed on the second edge side **415** of the frame **410** and includes a first edge and a second edge that are non-planar. A first portion of the second edge bevel **441** disposed in the top half portion **434** of the handle body **431** is aligned parallel to a first portion of the first edge bevel **440** disposed in the top half portion **434** of the handle body **431**, whereas a second edge portion of the second edge bevel **441** is aligned oblique to a second portion of the first edge bevel **440** disposed in the bottom half portion **436** of the handle body **431**. The second edge bevel **441** is congruent with the first edge bevel **440**. The second edge bevel **441** is four-sided and non-planar. The second edge bevel **441** extends the entire length of the handle body **431**.

The third intermediate bevel **450** is disposed between and contiguous with the second edge bevel **441**, the second face bevel **439**, the top cap **432** and the base cap **470**. The third intermediate bevel **450** is chiral and an enantiomorph of the second intermediate bevel **448** and the fourth intermediate bevel **450** and is congruent with the first intermediate bevel **442**. The third intermediate bevel **450** extends the entire length of the handle body **431** from the bottom half portion of the top cap **432** through the top half portion **434** to the bottom half portion **436** of the handle body **431** and terminates at the top of the base cap **470**. A first portion of the edge of third intermediate bevel **450** that adjoins the second side bevel **441** is parallel to the edge of the third intermediate bevel **450** that adjoins the second face bevel **439**, but a second portion of the edge of the third intermediate bevel **450** that adjoins the second edge bevel **441** is oblique to the edge of the third intermediate bevel **450** that adjoins the second face bevel **439**. The width of the widest portion of the third intermediate bevel **450** disposed in the bottom half portion **436** of the handle body **431** is wider than the width of the widest portion of the third intermediate bevel **450** disposed in the top half portion **434** of the handle body **431**. The third intermediate bevel **450** is four-sided and non-polygonal.

As shown in FIGS. **36** and **41**, the handle body **431** includes a second face bevel **439** that is aligned on the second face side **413** of the frame **410** and is disposed between and contiguous with the third intermediate bevel **450** and the fourth interme-

diate bevel **452**. Like the first face bevel **438**, the second face bevel **439** is rectangular and disposed between the bottom of the top cap **432** and the top of the base cap **470** and extends the entire length of the handle body **431** from the top half portion **434** through the bottom half portion **436** of the handle body **431**. The second face bevel **439** is congruent with the first face bevel **438**. As shown in FIGS. **42** and **43**, the first face bevel **438** and the second face bevel **439** are both planar and aligned parallel to each other.

The fourth intermediate bevel **452** is disposed between and contiguous with the second face bevel **439**, the first edge bevel **440**, the top cap **432** and the base cap **470**. The fourth intermediate bevel **450** is chiral and an enantiomorph of the first and third intermediate bevel **442** and **450** and congruent with the second intermediate bevel **448**. The width of the widest portion of the fourth intermediate bevel **452** disposed in the top half portion **434** of the handle body **431** is narrower than the width of the widest portion of the fourth intermediate bevel **452** disposed in the bottom half portion **436** of the handle body **431**. A first portion of the edge of fourth intermediate bevel **452** that adjoins the first side bevel **440** is parallel to the edge of the fourth intermediate bevel **452** that adjoins the second face bevel **439**, but a second portion of the edge of the fourth intermediate bevel **452** that adjoins the first edge bevel **440** is oblique to the edge of the fourth intermediate bevel **452** that adjoins the second face bevel **439**. The fourth intermediate bevel **452** is four-sided, non-polygonal, and extends the entire length of the handle body **431**.

The first intermediate bevel **442**, the first edge bevel **440** and the fourth intermediate bevel **452** combine to form a first lobe **467** protruding from the first edge side **414** of the handle body **431**. The second intermediate bevel **448**, the second edge bevel **441**, and the third intermediate bevel **450** combine to form a second lobe **469** protruding from the second edge side **415** of the handle body **431**. The first lobe **467** is congruent with the second lobe **469**. The first lobe **467** and the second lobe **469** are opposedly aligned on the handle body **431** and terminate within the bottom half portion **436** thereof. Between the bottom of the first and second lobes **467** and **469** and the top of the base cap **470** is disposed a waist **453** defined on the handle body **431**. The width of handle body **431** at the waist **453** is narrower than the width the handle body **431** at the widest point along the first and second lobes **467** and **469** combined. The waist **453** and the flared sides of the base cap **470** form retention slots on the first and second edge sides **414** and **415** in which a racket user can align one or more fingers to provide leverage and grip variations as the racket **400** is used.

A first shoulder **444** is disposed on the first lobe **467** and a second shoulder **446** is disposed on the second lobe **469**. The first shoulder **444** is disposed on the first edge side **414** of the handle **430** and the second shoulder **446** is disposed on the second edge side **415** of the handle **430**. The first and second lobes **467** and **469** are disposed below the neck **447** of the handle body **431**. The neck **447** is disposed between the bottom of the top cap **432** and the first and second shoulders **444** and **446**. The width of the handle body **431** at the neck **447** is narrower than the width of the handle body **431** at the first and the second lobes **467** and **469**. The first and second lobes **467** and **469** of the handle body **431** can provide increased surface area for contact of the user's hand on the racket **400**, as compared to a conventional racket handle.

The first face bevel **438** and the second face bevel **439** are aligned parallel to the axis **490** extending longitudinally through the handle **430**. The first shoulder **444** and the second shoulder **446** are both oblique to the axis **490**, as are at least a portion of each of the first, second, third and fourth intermediate bevels **442**, **448**, **450**, and **452**.

In one aspect, the shoulders of the handles of the sports rackets encompassed by the present disclosure can extend along at least 25% of the length of the elongated handle bodies. In another aspect, the shoulders of the handles can extend along at least 35% of the length of the elongated handle bodies. In yet another aspect, the shoulders of the handles extend along at least 50% of the length of the elongate handle bodies. In still a further aspect, the shoulders of the handles extend along at least 80% of the length of the elongated handle bodies.

The handle bodies of the racket handles of the present disclosure can be formed of a rigid material, such as polyurethane foam; alternatively, the handle bodies can be formed of a more resilient material, such as various types of elastomers, including, for example, rubber, polybutadiene, polystyrene-polybutadiene copolymers, polyisoprene, polystyrene-polyisopreme copolymers and similar polymers and copolymers that impart the desired level of resilience. Such resilient polymeric compounds can impart shock-absorbing properties to the handle and sufficient rigidity to impart power in the racket swing.

The handle bodies of the handles of the sports rackets encompassed by the present disclosure can be formed as a single unit or can comprise more than one component combined to form the handle body. For example, the handle bodies of the present disclosure can be formed by affixing to a standard octagonal racket handle one or more attachments that, when affixed to the handle, form the bevel arrangements of the racket handles of the present disclosure.

The embodiments set forth herein are provided to illustrate the scope of the present disclosure, but are not provided to limit the scope thereof. The present disclosure contemplates alternative combinations and modifications of the features disclosed herein without departing from the scope thereof. Alternatives, variations, and modifications of the embodiments described herein will be apparent to one of ordinary skill in the art and are encompassed by the present disclosure.

What is claimed is:

1. A sports racket comprising:

a frame comprising a first face side, a second face side, a first edge side, and a second edge side, wherein the frame further comprises a head with a hoop formed therein and a handle connected to the head, wherein the handle comprises an elongated handle body comprising a plurality of bevels formed thereon, wherein the elongated handle body comprises a top half portion disposed proximal to the head and a bottom half portion disposed distal to the head, wherein the elongated handle body further comprises a first flared shoulder disposed on the first edge side and a second flared shoulder disposed on the second edge side, wherein both the first flared shoulder and the second flared shoulder extend along at least 25% of the length of the elongated handle body, and wherein at least a portion of the bottom half portion of the elongated handle body is wider than at least a portion of the top half portion of the elongated handle body.

2. The sports racket of claim **1**, wherein both the first flared shoulder and the second flared shoulder extend along at least 35% of the length of the elongated handle body.

3. The sports racket of claim **1**, wherein both the first flared shoulder and the second flared shoulder extend along at least 50% of the length of the elongated handle body.

4. The sports racket of claim **1**, wherein both the first flared shoulder and the second flared shoulder extend along at least 80% of the length of the elongated handle body.

5. The sports racket of claim 1, wherein the elongated handle body further comprises a first lobe disposed along the first edge side.

6. The sports racket of claim 5, wherein the elongated handle body further comprises a second lobe disposed along the second edge side.

7. The sports racket of claim 1, wherein the elongated handle body further comprises a waist.

8. The sports racket of claim 7, further comprising a base cap attached to the elongated handle body, wherein the waist is disposed adjacent the base cap.

9. The sports racket of claim 1, wherein the elongated handle body further comprises a neck disposed along the top half portion.

10. The sports racket of claim 9, wherein the neck is disposed between the head and the first and the second flared shoulders.

11. The sports racket of claim 1, wherein the plurality of bevels consists of six bevels.

12. The sports racket of claim 1, wherein the plurality of bevels consists of eight bevels.

13. The sports racket of claim 1, wherein two bevels of the plurality of bevels extend along less than 75% of the length of the elongated handle body.

14. The sports racket of claim 1, wherein at least two of the plurality of bevels are parallel to each other.

15. The sports racket of claim 1, wherein at least one of the plurality of bevels is chiral and an enantiomorph of at least two of the plurality of bevels.

16. The sports racket of claim 15, wherein at least one of the plurality of bevels is congruent with at least one of the plurality of bevels.

17. A sports racket comprising:

a frame comprising a first face side, a second face side, a first edge side, and a second edge side, wherein the frame comprises a head and a handle connected to the head, wherein the head comprises a hoop with an aperture formed therein, and wherein the handle comprises a top half portion proximal to the head and a bottom half portion distal from the head, wherein the handle further comprises a first face bevel disposed on the first face side of the frame, a second face bevel disposed on the second face side of the frame, a first intermediate bevel adjoining the first face bevel and extending toward the first edge side of the frame, a second intermediate bevel adjoining the first face bevel and extending toward the second edge side of the frame, a third intermediate bevel adjoining the second face bevel and extending toward the second edge side of the frame, and a fourth intermediate bevel adjoining the second face bevel and extending toward the first edge side of the frame, wherein the first intermediate bevel extends along both the top half portion and the bottom half portion of the handle and wherein a first portion of the first intermediate bevel disposed along the bottom half portion is wider than a second portion of the first intermediate bevel disposed along the top half portion of the handle, and wherein the second intermediate bevel extends along both the top half portion and the bottom half portion of the handle and wherein a first portion of the second intermediate bevel disposed along the bottom half portion of the handle is wider than a second portion of the second intermediate bevel disposed along the top half portion of the handle.

18. The sports racket of claim 17, wherein the handle further comprises a first edge bevel disposed on the first edge side of the frame and aligned between the first intermediate bevel and the fourth intermediate bevel.

19. The sports racket of claim 18, wherein the handle further comprises a second edge bevel disposed on the second edge side of the frame and aligned between the second intermediate bevel and the third intermediate bevel.

20. The sports racket of claim 19, wherein a portion of the first edge bevel is aligned parallel to a portion of the second edge bevel.

21. The sports racket of claim 20, wherein a second portion of the first edge bevel is aligned nonparallel to the second edge bevel.

22. The sports racket of claim 17, wherein the first face bevel is aligned parallel to the second face bevel.

23. The sports racket of claim 17, wherein the third intermediate bevel extends along both the top half portion and the bottom half portion of the handle and wherein a first portion of the third intermediate bevel disposed along the bottom half portion of the handle is wider than a second portion of the third intermediate bevel disposed along the top half portion of the handle, and wherein the fourth intermediate bevel extends along both the top half portion and the bottom half portion of the handle, and wherein a first portion of the fourth intermediate bevel disposed along the bottom half portion of the handle is wider than a second portion of the fourth intermediate bevel disposed along the top half portion of the handle.

24. The sports racket of claim 17, wherein a portion of the first intermediate bevel is adjacent a portion of the fourth intermediate bevel.

25. The sports racket of claim 24, wherein a portion of the second intermediate bevel is adjacent a portion of the third intermediate bevel.

26. The sports racket of claim 25, wherein the handle further comprises a first edge bevel disposed on the first edge side of the frame and aligned between the first intermediate bevel and the fourth intermediate bevel.

27. The sports racket of claim 26, wherein the handle further comprises a second edge bevel disposed on the second edge side of the frame and aligned between the second intermediate bevel and the third intermediate bevel.

28. The sports racket of claim 27, wherein a portion of the first edge bevel is aligned parallel to a portion of the second edge bevel.

29. The sports racket of claim 17, wherein the handle further comprises a first lobe disposed along the first edge side.

30. The sports racket of claim 29, wherein the handle further comprises a second lobe disposed along the second edge side.

31. The sports racket of claim 17, wherein the handle comprises a waist.

32. The sports racket of claim 17, wherein the first intermediate bevel is chiral and an enantiomorph of the second intermediate bevel.

33. The sports racket of claim 32, wherein the first intermediate bevel is chiral and an enantiomorph of the fourth intermediate bevel.

34. The sports racket of claim 17, wherein the first intermediate bevel is congruent with the third intermediate bevel.

35. The sports racket of claim 17, wherein the first intermediate bevel is chiral and an enantiomorph of the second and the fourth intermediate bevels, and wherein the first intermediate bevel is congruent with the third intermediate bevel.

36. The sports racket of claim 35, wherein the second intermediate bevel is congruent with the fourth intermediate bevel.

37. The sports racket of claim 17, wherein the handle further comprises a neck disposed along the top half portion.

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